Round: 1 Room: 1 Fight Assistants: Mr. Komsun Rapaway

	Stage 1			Stage 2			Stage 3			Stage 4		
Team	Singapore	Poland	Romania	Poland	Romania	Singapore	Romania	Singapore	Poland			
Juror	Rep	Opp	Rev	Rep	Opp	Rev	Rep	Opp	Rev	Rep	Opp	Rev
Martin Plesch (chair)	6	8	6	5	5	8	3	8	9			
Feng Song	6	7	7	6	5	8	4	7	8			
Volodymyr Kulinskyi	8	9	6	6	6	7	6	8	9			
Lars Gislen	7	8	6	6	5	7	4	6	7			
Kent Hogan	7	8	6	7	6	6	3	9	7			
Acting Team Member	Shen Yu Jun	Rafost Waszkiewicz	GOLDIS ANCA	Frederic Grabowski	Hania Magureanu	KOH JIN MING	Alexanda Bâdut	Q WITTMANN CLOH	Anna Wald			
Rejected Problems	15 Moving Brush			No			10 Singing Blades of Grass					
Accepted Problem	6 Magnus Glider			13 Magnetic Pendulum			12 Thick Lens					

Signature Fight Assistant: [signature] Double-checked with Scoring Guidelines by second Fight Assistant (signature): [signature]

Scoring Guidelines

Fight (Round no.): 1 Room: 1 Stage: 1 Problem no.: 6

Juror: Kent Hogar Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories***, ***principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Shen Yu Jun, Singapore — 5

Physics ±3 +1

- ☑ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☒ Accurate answers

Presentation ±1 +½

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 +½

- ☑ Quality of experimental technique(s)
- ☐ Structure
- ☒ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 7

Opp.: Radost, Poland — 5

Physics ±3 +2

- ☑ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☑ Accurate answers

Presentation ±1 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 +1

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 8

Rev.: Goldis Anca, Romania — 5

Physics ±3 +1

- ☑ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 0

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 6

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 1 Stage: 1 Problem no.: 6

Juror: LARS GISLÉN Signature: [signature]

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories***, ***principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
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- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: SINGAPORE — 5

Physics ±3 — 1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — 1

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 7

Opp.: POLEN — 5

Physics ±3 — 2

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 — 1

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent — 8

Rev.: ROMANIA — 5

Physics ±3 — 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — 1

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 6

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 1 Stage: 1 Problem no.: 6

Juror: Kulinskyi V. Signature: [signature]

A report should include:
• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

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• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:
• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles and appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics, presentation*** and for their ***specific role***.
- The ***reporter, opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Singapore Shen Yu Jun — 5

Physics ±3 — 2,5
- [x] Correct and relevant physics
- [x] Scientific approach
- [x] Validity of conclusions
- [ ] Accurate answers

Presentation ±1 — 0,5
- [x] Clear and understandable
- [ ] Appropriate manner
- [ ] Overall impression

Reporter ±1 — 0,5
- [x] Quality of experimental technique(s)
- [x] Structure
- [x] Explanation of formulae and symbols
- [ ] Appropriate models, conformity of dimensions
- [x] Slides, on-site experiments, audio, video, as appropriate
- [x] References, proper citations of ideas and input of others
- [ ] Novelty of the report
- [ ] Contribution to the discussion

Final Grade: Reporter — 8

Opp.: Poland Waskiewizh — 5

Physics ±3 — 2
- [x] Correct and relevant physics
- [x] Scientific approach
- [ ] Validity of conclusions
- [x] Accurate answers

Presentation ±1 — 1
- [x] Clear and understandable
- [ ] Appropriate manner
- [ ] Overall impression

Opponent ±1 — 1
- [x] Response to the reporter's solution
- [x] Shows the strong and weak points of the report
- [x] Finds shortcomings or errors in the report
- [x] Relevance of the questions
- [ ] Contribution to the discussion

Final Grade: Opponent — 9

Rev.: Romania — 5

Physics ±3 —
- [ ] Correct and relevant physics
- [ ] Scientific approach
- [ ] Validity of conclusions
- [ ] Accurate answers

Presentation ±1 — 1
- [x] Clear and understandable
- [ ] Appropriate manner
- [ ] Overall impression

Reviewer ±1 —
- [x] Provides a thorough review of report and discussion
- [ ] Expresses own opinion about topics presented or discussed
- [ ] Relevance of questions to both the reporter and the opponent
- [ ] Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 6

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 1 Stage: 1 Problem no.: _____

Juror: Feng Song Signature: Feng Song

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

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- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: SG — 5

Physics ±3
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1
- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 6

Opp.: PL — 5

Physics ±3
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1
- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 7

Rev.: RO — 5

Physics ±3
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1
- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 7

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 7 Room: 1 Stage: 1 Problem no.: _____

Juror: PCB3CH Signature: [signature]

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

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- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
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- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: _____ 5

Physics ±3 1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 +0,5

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 0

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 6

Opp.: _____ 5

Physics ±3 2

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0,5

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 0,5

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 8

Rev.: _____ 5

Physics ±3 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 +0,5

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 +0,5

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 6

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 1 Stage: 2 Problem no.: 13

Juror: Kent Hogan Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

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- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Poland — 5

Physics ±3 +1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 +½

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 +½

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 7

Opp.: Romania — 5

Physics ±3 +1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 0

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 6

Rev.: Singapore — 5

Physics ±3 +2

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 -½

- ☒ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 -½

- ☒ Provides a thorough review of report and discussion
- ☑ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 6

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 1 Stage: 2 Problem no.: 13

Juror: LARS GISLER Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

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- The ***reporter, opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: _____ 5

Physics ±3 0.5

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0.5

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 0.5

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 6

Opp.: _____ 5

Physics ±3 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 0

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 5

Rev.: _____ 5

Physics ±3 1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 1

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 7

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 1 Stage: II Problem no.: 13

Juror: kulinskyi V. Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter, opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Poland Grabowski — 5

Physics ±3

- ? ☐ Correct and relevant physics
- ☒ Scientific approach
- ? ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1

- ☐ Clear and understandable
- ☒ Appropriate manner
- ☐ Overall impression

Reporter ±1 — 1

- ☒ Quality of experimental technique(s)
- ☐ Structure
- ☒ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☒ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 6

Opp.: Romania Magureanu — 5

Physics ±3

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent — 6

Rev.: Singapore Kon Jin Ming — 5

Physics ±3 — 1

- ☐ Correct and relevant physics
- ☒ Scientific approach
- ☒ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0,5

- ☐ Clear and understandable
- ☒ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — 0,5

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☒ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 7

Revised after IOC feedback and approved by EC on 2011-11-03

13.

Scoring Guidelines

Fight (Round no.): 1 Room: 1 Stage: 2 Problem no.: _____

Juror: F. Song Signature: [signature]

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: PL — 5

Physics ±3

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 6

Opp.: RO — 5

Physics ±3

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 5

Rev.: SG — 5

Physics ±3

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 8

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 1 Stage: 2 Problem no.: 13

Juror: PLÄSCH Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

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• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories***, ***principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: ____ 5

Physics ±3 -0,5

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 Ø

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 Ø

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 5

Opp.: ____ 5

Physics ±3 0,5

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 -0,5

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 0,5

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 5

Rev.: ____ 5

Physics ±3 1,5

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0,25

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 0,75

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 8

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 1 Stage: 3 Problem no.: 12

Juror: Kent Hogan Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories***, ***principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Romania — Alexandra Badut — 5

Physics ±3 −1

- [x] Correct and relevant physics
- [x] Scientific approach
- [ ] Validity of conclusions
- [ ] Accurate answers

Presentation ±1 0

- [ ] Clear and understandable
- [ ] Appropriate manner
- [ ] Overall impression

Reporter ±1 −1

- [x] Quality of experimental technique(s)
- [ ] Structure
- [ ] Explanation of formulae and symbols
- [ ] Appropriate models, conformity of dimensions
- [ ] Slides, on-site experiments, audio, video, as appropriate
- [ ] References, proper citations of ideas and input of others
- [ ] Novelty of the report
- [ ] Contribution to the discussion

Final Grade: Reporter 3

Opp.: Singapore — Wittmann Goh — 5

Physics ±3 +2

- [ ] Correct and relevant physics
- [ ] Scientific approach
- [ ] Validity of conclusions
- [ ] Accurate answers

Presentation ±1 +1

- [ ] Clear and understandable
- [ ] Appropriate manner
- [ ] Overall impression

Opponent ±1 +1

- [ ] Response to the reporter's solution
- [ ] Shows the strong and weak points of the report
- [ ] Finds shortcomings or errors in the report
- [ ] Relevance of the questions
- [ ] Contribution to the discussion

Final Grade: Opponent 9

Rev.: Poland — 5

Physics ±3 +1

- [ ] Correct and relevant physics
- [ ] Scientific approach
- [ ] Validity of conclusions
- [ ] Accurate answers

Presentation ±1 0

- [ ] Clear and understandable
- [ ] Appropriate manner
- [ ] Overall impression

Reviewer ±1 +1

- [ ] Provides a thorough review of report and discussion
- [ ] Expresses own opinion about topics presented or discussed
- [ ] Relevance of questions to both the reporter and the opponent
- [ ] Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 7

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 1 Stage: 3 Problem no.: 12

Juror: LARS GISLÉN Signature: Lars Gisl.

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: ROMANIA — 5

Physics ±3 — −1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — 0

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 4

Opp.: SINGAPORE — 5

Physics ±3 — 1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☑ Overall impression

Opponent ±1 — 0

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent — 6

Rev.: POLAND — 5

Physics ±3 — 1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — 1

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 7

Revised after IOC feedback and approved by EC on 2011-11-03

Probs : 6, [illegible]

Scoring Guidelines

Fight (Round no.): 1 Room: 1 Stage: III Problem no.: 12

Juror: Kyelinskyi V. Signature: [signature]

A report should include:
• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

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• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

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• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics, presentation*** and for their ***specific role***.
- The ***reporter, opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Romanie Alexandre Badut — 5

thick? thin

Physics ±3 — 0,5

(4) ☒ Correct and relevant physics
☐ Scientific approach
☐ Validity of conclusions
☐ Accurate answers

Presentation ±1 — 0,5

☒ Clear and understandable
☐ Appropriate manner
☐ Overall impression

Reporter ±1 — 0,5

? ☒ Quality of experimental technique(s)
☒ Structure
☒ Explanation of formulae and symbols
☒ Appropriate models, conformity of dimensions
☒ Slides, on-site experiments, audio, video, as appropriate
☐ References, proper citations of ideas and input of others
? ☐ Novelty of the report
☒ Contribution to the discussion

Final Grade: Reporter — 6

Opp.: Singapore Wittman Gerry — 5

Physics ±3 — 1

☒ Correct and relevant physics
☐ Scientific approach
☒ Validity of conclusions
☐ Accurate answers

Presentation ±1 — 0,5

☐ Clear and understandable
☒ Appropriate manner
☐ Overall impression

Opponent ±1 — 1,5

☒ Response to the reporter's solution
☒ Shows the strong and weak points of the report
☐ Finds shortcomings or errors in the report
☒ Relevance of the questions
☒ Contribution to the discussion

Final Grade: Opponent — 8

Rev.: Poland — 5

Physics ±3 — 2

☒ Correct and relevant physics
☒ Scientific approach
☒ Validity of conclusions
☐ Accurate answers

Presentation ±1 — 1

☒ Clear and understandable
☐ Appropriate manner
☐ Overall impression

Reviewer ±1 — 1

☒ Provides a thorough review of report and discussion
☐ Expresses own opinion about topics presented or discussed
☐ Relevance of questions to both the reporter and the opponent
☒ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 9

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 1 Stage: 3 Problem no.: 12

Juror: F. SONG Signature: F. Song

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

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- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: PO — 5

Physics ±3 —

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 —

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 —

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 4

Opp.: SG — 5

Physics ±3 —

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 —

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☑ Overall impression

Opponent ±1 —

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 7 F. Song

Rev.: PO PL — 5

Physics ±3 —

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☑ Accurate answers

Presentation ±1 —

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 —

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 8

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 1 Stage: 3 Problem no.: 12

Juror: TUESCH Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

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• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** **and** ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** *and* ***appropriate mathematics*** used by the reporter and the opponent

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- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
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- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: 5

Physics ±3 -1,5

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 0

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 3

Opp.: 5

Physics ±3 3,5

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0,5

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☑ Overall impression

Opponent ±1 0,5

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 8

Rev.: 5

Physics ±3 2,5

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0,5

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 0,5

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 9

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 2 Stage: 1 Problem no.: 6

Juror: [illegible] Signature: [signature]

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter, opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: USA — 5

Physics ±3 — -1,5

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — -0,25

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 3

Opp.: UK — 5

Physics ±3 — 1,5

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 — 0,25

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent — 7

Rev.: Brazil — 5

Physics ±3 — 2,5

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — +0,5

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — +0,25

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 8

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 2 Stage: 1 Problem no.: 6

Juror: KUNDRACIK Signature: _____

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: USA — 5

Physics ±3 — −2

- [−] Correct and relevant physics
- [−] Scientific approach
- [ ] Validity of conclusions
- [ ] Accurate answers

Presentation ±1 — +0,5

- [+] Clear and understandable
- [ ] Appropriate manner
- [ ] Overall impression

Reporter ±1 — 0

- [+] Quality of experimental technique(s)
- [+] Structure
- [−] Explanation of formulae and symbols
- [−] Appropriate models, conformity of dimensions
- [+] Slides, on-site experiments, audio, video, as appropriate
- [ ] References, proper citations of ideas and input of others
- [ ] Novelty of the report
- [−] Contribution to the discussion

Final Grade: Reporter — 4

Opp.: UK — 5

Physics ±3 — −2

- [−] Correct and relevant physics
- [ ] Scientific approach
- [+] Validity of conclusions
- [ ] Accurate answers

Presentation ±1 — 0

- [ ] Clear and understandable
- [ ] Appropriate manner
- [ ] Overall impression

Opponent ±1 — +0,5

- [+] Response to the reporter's solution
- [−] Shows the strong and weak points of the report
- [−] Finds shortcomings or errors in the report
- [+] Relevance of the questions
- [ ] Contribution to the discussion

Final Grade: Opponent — 4

Rev.: BRAZIL — 5

Physics ±3 — +1

- [✓] Correct and relevant physics
- [ ] Scientific approach
- [ ] Validity of conclusions
- [ ] Accurate answers

Presentation ±1 — +0,5

- [✓] Clear and understandable
- [ ] Appropriate manner
- [ ] Overall impression

Reviewer ±1 — +0,5

- [−] Provides a thorough review of report and discussion
- [✓] Expresses own opinion about topics presented or discussed
- [+] Relevance of questions to both the reporter and the opponent
- [✓] Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 7

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 2 Stage: 1 Problem no.: 6 (Magnus)

Juror: Pornrat Wattanakasiwich Signature: [signature]

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories***, ***principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: USA — 5

Physics ±3 — −2
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — +1
- ☑ Clear and understandable
- ☑ Appropriate manner
- ☑ Overall impression

Reporter ±1 — +1
- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☑ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☑ Contribution to the discussion

Final Grade: Reporter — 5

Opp.: UK — 5

Physics ±3 — −1
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — +1
- ☑ Clear and understandable
- ☑ Appropriate manner
- ☑ Overall impression

Opponent ±1 — +1
- ☑ Response to the reporter's solution
- ☑ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☑ Contribution to the discussion

Final Grade: Opponent — 6

Rev.: Brazil — 5

Physics ±3 — +0.5
- ☑ Correct and relevant physics
- ☐ Scientific approach
- ☑ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — +1
- ☑ Clear and understandable
- ☑ Appropriate manner
- ☑ Overall impression

Reviewer ±1 — +0.5
- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☑ Relevance of questions to both the reporter and the opponent
- ☑ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 7

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 2 Stage: 1 Problem no.: 6

Juror: Kwang Kim Signature: K Kim

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: USA — 5

Physics ±3 — -1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — 0

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 4

Opp.: UK — 5

Physics ±3 — 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 — +1

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☑ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent — 6

Rev.: BR — 5

Physics ±3 — 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — +1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☑ Overall impression

Reviewer ±1 — +1

- ☑ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 7

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 2 Stage: 1 Problem no.: 6

Juror: Zat Neng Chan Signature: [signature]

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics, presentation*** and for their ***specific role***.
- The ***reporter, opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: US 5

Physics ±3 +0.5

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 +0.5

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 −1

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 5

Opp.: UK 5

Physics ±3 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 +0.5

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 +1

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 7

Rev.: BR 5

Physics ±3 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 +1

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 6

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 3 Room: 2 Stage: 2 Problem no.: 17

Juror: OSTERMEIER Signature: F. Oster

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: UU — 5

Physics ±3 — -1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — -0,5

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 4

Opp.: Brazil — 5

Physics ±3 — +0,5

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — -0,25

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☑ Overall impression

Opponent ±1 — -0,25

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent — 6

Rev.: USA — 5

Physics ±3 — +0,25

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☑ Validity of conclusions
- ☑ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — -0,25

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 5

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 2 Stage: 2 Problem no.: 17

Juror: KUNDRATEK Signature: [signature]

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** **and** ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories, principles*** *and* ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: UK — 5

Physics ±3 — −1

- ☐ Correct and relevant physics
- ☒ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — 0

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 4

Opp.: BRAZIL — 5

Physics ±3 — 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — +0,5

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☑ Overall impression

Opponent ±1 — −0,5

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent — 5

Rev.: USA — 5

Physics ±3 — +1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — +0,5

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — +0,5

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 7

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 2 Stage: 2 Problem no.: 17

Juror: Pornrat Wattanakasiwich Signature: [signature]

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter, opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: OK — 5

Physics ±3 — -0.5

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — +0.5

- ☑ Clear and understandable
- ☑ Appropriate manner
- ☑ Overall impression

Reporter ±1 — 0

- ☑ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☑ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 5

Opp.: Brazil — 5

Physics ±3 — +0.5

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — +0.5

- ☑ Clear and understandable
- ☑ Appropriate manner
- ☑ Overall impression

Opponent ±1 — +1

- ☑ Response to the reporter's solution
- ☑ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent — 7

Rev.: USA — 5

Physics ±3 — 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — +0.5

- ☑ Clear and understandable
- ☑ Appropriate manner
- ☑ Overall impression

Reviewer ±1 — +0.5

- ☑ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 6

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 2 Stage: 2 Problem no.: 17

Juror: Kwong Kim Signature: K Kim

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories***, ***principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: UK — 5

Physics ±3

☐	Correct and relevant physics
☐	Scientific approach
☐	Validity of conclusions
☐	Accurate answers

Presentation ±1 +1

☑	Clear and understandable
☐	Appropriate manner
☐	Overall impression

Reporter ±1

☐	Quality of experimental technique(s)
☐	Structure
☐	Explanation of formulae and symbols
☐	Appropriate models, conformity of dimensions
☐	Slides, on-site experiments, audio, video, as appropriate
☐	References, proper citations of ideas and input of others
☐	Novelty of the report
☐	Contribution to the discussion

Final Grade: Reporter 6

Opp.: BR — 5

Physics ±3

☐	Correct and relevant physics
☐	Scientific approach
☐	Validity of conclusions
☐	Accurate answers

Presentation ±1

☐	Clear and understandable
☐	Appropriate manner
☑	Overall impression

Opponent ±1 +1

☐	Response to the reporter's solution
☑	Shows the strong and weak points of the report
☐	Finds shortcomings or errors in the report
☐	Relevance of the questions
☐	Contribution to the discussion

Final Grade: Opponent 6

Rev.: US — 5

Physics ±3 +1

☐	Correct and relevant physics
☑	Scientific approach
☐	Validity of conclusions
☐	Accurate answers

Presentation ±1 -1

☐	Clear and understandable
☐	Appropriate manner
☐	Overall impression

Reviewer ±1 +1

☑	Provides a thorough review of report and discussion
☐	Expresses own opinion about topics presented or discussed
☐	Relevance of questions to both the reporter and the opponent
☐	Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 6

Scoring Guidelines

Fight (Round no.): 1 Room: 2 Stage: 2 Problem no.: 17

Juror: Tat Neng Chan Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** *and* ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: ~~BF~~UK — 5

Physics ±3 — 0.5

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — +0.5

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 6

Opp.: BR — 5

Physics ±3 — 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — +0.5

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☑ Overall impression

Opponent ±1 — +1

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent — 7

Rev.: US — 5

Physics ±3 — 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — -0.5

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — +1

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 6

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 7 Room: 2 Stage: 3 Problem no.: 16

Juror: OSTERMANN Signature: F. Ostermann

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: ____ 5

Physics ±3 1,5

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 -0,5

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 +0,75

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 7

Opp.: ____ 5

Physics ±3 +2,0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 +0,25

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 0

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 7

Rev.: ____ 5

Physics ±3 +1,5

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 +0,5

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 7

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 2 Stage: 3 Problem no.: 16

Juror: LOWDNAGIL Signature: [signature]

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: BRAZIL — 5

Physics ±3 +1
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 +1
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 0
- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 7

Opp.: OSA — 5

Physics ±3 +1
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 +1
- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 7

Rev.: UK — 5

Physics ±3 +1
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 +1
- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 7

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 2 Stage: 3 Problem no.: 16

Juror: Pornrat Wattanakasiwich Signature: [signature]

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter, opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Brazil — 5

Physics ±3 +0.5

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 +0.5

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☑ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 6

Opp.: US — 5

Physics ±3 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 -0.5

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 +0.5

- ☐ Response to the reporter's solution
- ☑ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 5

Rev.: UK — 5

Physics ±3 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 +0.5

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 +0.5

- ☐ Provides a thorough review of report and discussion
- ☑ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 6

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 2 Stage: 3 Problem no.: 16

Juror: Kwang Kim Signature: K Kim

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: BR — 5

Physics ±3 — -1
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — +1
- ☑ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — +1
- ☑ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 6

Opp.: US — 5

Physics ±3 — 0
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 — 0
- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 5

Rev.: UK — 5

Physics ±3 — -1
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — +1
- ☐ Clear and understandable
- ☑ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — +1
- ☑ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 6

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 2 Stage: 3 Problem no.: 16

Juror: Iat Keng Cham Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories***, ***principles*** *and* ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: BR — 5

Physics ±3 +0.5

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 +0.5

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 +1

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 7

Opp.: US — 5

Physics ±3 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 +0.5

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 -0.5

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 5

Rev.: UK — 5

Physics ±3 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 +0.5

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 +0.5

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 6

Revised after IOC feedback and approved by EC on 2011-11-03

Round: 1 Room: 2 Fight Assistants: Kunakorn Palanong / Jiraporn Saenjae

	Stage 1			Stage 2			Stage 3			Stage 4		
Team	USA	Uk	Brazil	Uk	Brazil	USA	Brazil	USA	Uk			
Juror	Rep	Opp	Rev	Rep	Opp	Rev	Rep	Opp	Rev	Rep	Opp	Rev
Florian Ostermaier	3	7	8	4	6	5	7	7	7			
František kundracik	4	4	7	4	5	7	7	7	7			
Pornrat Wattanakasiwich	5	6	7	5	7	6	6	5	6			
Kwang Joo kim	4	6	7	6	6	6	6	5	6			
Iat Neng Chan	5	7	6	6	7	6	7	5	6			
Acting Team Member	Andrew Mangabat	Dominic Dootson	Thiago Bergamaschi	Yuqing Xu	Matheus Camacho	John Lukowski	Thiago Bergamaschi	David Nascari	Dominic Dootson			
Rejected Problems	11			1			1					
Accepted Problem	6			17			16					

Signature Fight Assistant: Kunakorn Palanong Double-checked with Scoring Guidelines by second Fight Assistant (signature): Jiraporn Saenjae

Round: 1 Room: 3 Fight Assistants: Jaru Jutimoosik ; Rojnapa Tharamas

	Stage 1			Stage 2			Stage 3			Stage 4		
Team	AUS	NZ	BULG	NZ	BULG	AUS	BULG	AUS	NZ			
Juror	Rep	Opp	Rev	Rep	Opp	Rev	Rep	Opp	Rev	Rep	Opp	Rev
Ulrike Regner	5	8	8	4	7	5	7	4	8			
Leszek Gladczuk	5	6	6	6	7	7	7	7	8			
Narumon Suwonjandee	5	7	5	6	7	4	6	6	7			
Qian Sun	5	8	8	6	7	8	7	6	7			
Peter Jenei	5	8	7	4	5	5	5	6	7			
Acting Team Member	Isaac Edward	Jack Tiegida	Mitko Benkov	Catherine Pot	Dilyan Hristov	Grace Rehn	Dilyan Hristov	Kevin Zhang	Catherine Pot			
Rejected Problems	1			1			1					
Accepted Problem	9			4			13 Magnetic Pendulum					

Signature Fight Assistant: Jaru Jutimoosik Double-checked with Scoring Guidelines by second Fight Assistant (signature): Rojnapa Tharamas

Scoring Guidelines

Fight (Round no.): 1 Room: 3 Stage: 1 Problem no.: 9

Juror: REGNER Signature: [signature]

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles and appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter, opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Australia — Isaac Edwards — 5

Physics ±3 — 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — 0

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 5

Opp.: NZ — Jed Treagus — 5

Physics ±3 — +2,5

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 — +0,5

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent — 8

Rev.: Bulgaria — Mitko Bantov — 5

Physics ±3 — +2

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — +1

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 8

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 3 Stage: 1 Problem no.: 9

Juror: Goederuk Signature: L. Goederuk

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles and appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Australia — 5

Physics ±3 — -1
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — .25
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — .5
- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 5

Opp.: New Zeland — 5

Physics ±3 — 0
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 1.0
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 — 0.25
- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent — 6

Rev.: Bulgaria — 5

Physics ±3 — 1
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — .25
- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 6

Revised after IOC feedback and approved by EC on 2011-11-03

#9 Hovercraft.

Scoring Guidelines

Fight (Round no.): 1 Room: 3 Stage: 1 Problem no.: 9

Juror: Nanuma Signature: N.S.

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

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- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Australia — 5

Physics ±3 —
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 —
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 —
- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 5

Opp.: New Zealand — 5

Physics ±3 0.5
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 —
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 1
- ☑ Response to the reporter's solution
- ☑ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☑ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 4

Rev.: Bulgaria — 5

Physics ±3 —
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 —
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 —
- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 5

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 3 Stage: 1 Problem no.: 9

Juror: QIAN SUN Signature: [signature]

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories***, ***principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: ____ 5

Physics ±3 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 0

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 5

Opp.: ____ 5

Physics ±3 2

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 0

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 8

Rev.: ____ 5

Physics ±3 1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 1

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 8

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 3 Stage: 1 Problem no.: 9

Juror: PETER ZENEI Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles and appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: AUSTRALIA — 5

Physics ±3 — 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — 0

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 5

Opp.: NEW ZEALAND — 5

Physics ±3 — 2

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 — 1

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 8

Rev.: BULGARIA — 5

Physics ±3 — 2

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — 0

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 7

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 3 Stage: 2 Problem no.: 4

Juror: REGNER Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles and appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter, opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: NZ — Catherine Post — 5

Physics ±3 -0,5

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 -0,5

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 4

Opp.: Bulgaria — Dilyan Hristov — 5

Physics ±3 +2

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 0

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 7

Rev.: Australia — Grace Rihm — 5

Physics ±3 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 0

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 5

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 3 Stage: 2 Problem no.: 4

Juror: L. Grodecuk Signature: L. Grodecuk

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles and appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: New Zeland — 5

Physics ±3 — 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0.5

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — 0.5

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 6

Opp.: Bulgary — 5

Physics ±3 — 1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0.5

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 — 0.5

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent — 7

Rev.: Australia — 5

Physics ±3 — 1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0.5

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — 0.5

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 7

Revised after IOC feedback and approved by EC on 2011-11-03

#4 Liquid Film Motor

Scoring Guidelines

Fight (Round no.): 1 Room: 3 Stage: 2 Problem no.: ____

Juror: Nanna Signature: NS.

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter, opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: New Zealand — 5

Physics ±3 — −

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — −

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — 1

- ☑ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☑ Appropriate models, conformity of dimensions
- ☑ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☑ Contribution to the discussion

Final Grade: Reporter — 6

Opp.: Bulgaria — 5

Physics ±3 — 1

- ☑ Correct and relevant physics
- ☑ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — −

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 — 1

- ☑ Response to the reporter's solution
- ☑ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☑ Relevance of the questions
- ☑ Contribution to the discussion

Final Grade: Opponent — 7

Rev.: Australia — 5

Physics ±3 — −1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — −

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

present her own idea

Reviewer ±1 — −

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 4

Scoring Guidelines

Fight (Round no.): 1 Room: 3 Stage: 2 Problem no.: 4

Juror: QIAN SUN Signature: [signature]

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** **and** ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories***, ***principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: NZ	5	**Opp.:** Pol	5	**Rev.:** Aus	5
Physics ±3	1	**Physics ±3**	0	**Physics ±3**	1
☐ Correct and relevant physics		☐ Correct and relevant physics		☐ Correct and relevant physics	
☐ Scientific approach		☐ Scientific approach		☐ Scientific approach	
☐ Validity of conclusions		☐ Validity of conclusions		☐ Validity of conclusions	
☐ Accurate answers		☐ Accurate answers		☐ Accurate answers	
Presentation ±1	0	**Presentation ±1**	1	**Presentation ±1**	1
☐ Clear and understandable		☐ Clear and understandable		☐ Clear and understandable	
☐ Appropriate manner		☐ Appropriate manner		☐ Appropriate manner	
☐ Overall impression		☐ Overall impression		☐ Overall impression	
Reporter ±1	0	**Opponent ±1**	1	**Reviewer ±1**	1
☐ Quality of experimental technique(s)		☐ Response to the reporter's solution		☐ Provides a thorough review of report and discussion	
☐ Structure		☐ Shows the strong and weak points of the report		☐ Expresses own opinion about topics presented or discussed	
☐ Explanation of formulae and symbols		☐ Finds shortcomings or errors in the report		☐ Relevance of questions to both the reporter and the opponent	
☐ Appropriate models, conformity of dimensions		☐ Relevance of the questions		☐ Draws attention to points missed by the reporter or the opponent	
☐ Slides, on-site experiments, audio, video, as appropriate		☐ Contribution to the discussion			
☐ References, proper citations of ideas and input of others					
☐ Novelty of the report					
☐ Contribution to the discussion					
Final Grade: Reporter	6	Final Grade: Opponent	7	Final Grade: Reviewer	8

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 3 Stage: 2 Problem no.: 4

Juror: PETER JENEI Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories***, ***principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: NEW ZEALAND — 5

Physics ±3 — −1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — 0

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 4

Opp.: BULGARIA — 5

Physics ±3 — 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 — 0

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 5

Rev.: AUSTRALIA — 5

Physics ±3 — 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — 0

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 5

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 3 Stage: 3 Problem no.: 13

Juror: REGNER Signature: [signature]

A report should include:
• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:
• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:
• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles and appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics, presentation*** and for their ***specific role***.
- The ***reporter, opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Bulgaria — Dizyan Hristov — 5

Physics ±3 +1
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 +0,5
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 +0,5
- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 7

Opp.: Australia — Kevin Zhang — 5

Physics ±3 -0,5
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 -0,5
- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 4

Rev.: NZ — Catherine Pot — 5

Physics ±3 +1
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 +1
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 +1
- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 8

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 3 Stage: 3 Problem no.: 13

Juror: Leszek Gładki Signature: L. Gładki

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Bugajny — 5

Physics ±3 — 1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0.5

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — 0.5

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 7

Opp.: Austelin — 5

Physics ±3 — 1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 — 1

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent — 7

Rev.: Mew Zelovet — 5

Physics ±3 — 1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — 1

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 8

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 3 Stage: 3 Problem no.: 13

Juror: Nasima Signature: N.S.

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles and appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Bulgeria — 5

Physics ±3 —

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 —

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 +0.5 (speak very fast)

- ☑ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☑ Contribution to the discussion

Final Grade: Reporter 6

Opp.: ~~New Zealand~~ Australia — 5

Physics ±3 —

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 —

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 +0.5

- ☐ Response to the reporter's solution
- ☑ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☑ Contribution to the discussion

Final Grade: Opponent 6

Rev.: ~~Australia~~ New Zealand — 5

Physics ±3 —

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 +0.5

- ☑ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 +1

- ☑ Provides a thorough review of report and discussion
- ☑ Expresses own opinion about topics presented or discussed
- ☑ Relevance of questions to both the reporter and the opponent
- ☑ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 7

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 3 Stage: 3 Problem no.: 13

Juror: QIAN SUN Signature: Q. Sun

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: POT — 5

Physics ±3 — 1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — 1

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 7

Opp.: Ans — 5

Physics ±3 — 1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☑ Overall impression

Opponent ±1 — 0

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent — 6

Rev.: [illegible] — 5

Physics ±3 — 1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — 1

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 7

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 3 Stage: 3 Problem no.: 13

Juror: PETER ZENEI Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories, principles*** *and* ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: BULGARIA — 5

Physics ±3 — −1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — +1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — 0

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 5

Opp.: AUSTRALIA — 5

Physics ±3 — 1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☑ Overall impression

Opponent ±1 — 0

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent — 6

Rev.: NEW ZEALAND — 5

Physics ±3 — 1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — 0

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 7

Revised after IOC feedback and approved by EC on 2011-11-03

Round: 1 Room: 4 Fight Assistants: Reem Rhinjaretphan , Adithep Butraburi

	Stage 1			Stage 2			Stage 3			Stage 4		
Team	IR	CHI	SWI	China	Swi	IRAN	Swi	Iran	China			
Juror	Rep	Opp	Rev	Rep	Opp	Rev	Rep	Opp	Rev	Rep	Opp	Rev
Assen Kyuldjiev	5	6	7	4	6	6	3	3	8			
Kathryn Zealand	7	6	7	6	6	4	4	6	7			
Myeung Hoi Kwon	5	6	6	5	6	7	6	6	8			
Rainer Reichle	5	7	6	4	5	6	4	5	7			
Andrey Shchetnikov	4	5	6	4	7	6	3	3	6			
Acting Team Member	Yasmin Mazouni	Guanghe Cong	Lioba Heimbach	Jiahong Yi	Kathrin Laxhuber	Amirhossein Ebadi	Phyllis Booth	Yasamin Mazunisefidkhani	Kehan Lu.			
Rejected Problems							No. 11 , No. 15.					
Accepted Problem	No. 13 Magnetic Pendulum			NO. 10			No. 2					

Signature Fight Assistant:..... Double-checked with Scoring Guidelines by second Fight Assistant (signature): .....

Scoring Guidelines

Fight (Round no.): 1 Room: 4 Stage: 1 Problem no.: 13

Juror: Kyuldjiev Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories, principles*** *and* ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: ____ 5

Physics ±3 +0.1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 +0.1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 5

Opp.: ____ 5

Physics ±3 +1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 6

Rev.: ____ 5

Physics ±3 +1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 +0.5

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 +0.5

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 7

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 4 Stage: 1 Problem no.: 13

Juror: Kathryn Zealand Signature: [signature]

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

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- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: IRAN — 5

I missed a clear physical explanation for jump

Physics ±3 +1½

- ☑ Correct and relevant physics
- ☑ Scientific approach
- ☑ Validity of conclusions
- ☑ Accurate answers

Presentation ±1 -½

- ☒ Clear and understandable
- ☑ Appropriate manner
- ☐ Overall impression

spoke very fast

Reporter ±1 +½

- ☑ Quality of experimental technique(s)
- ☑ Structure
- ☒ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☑ Slides, on-site experiments, audio, video, as appropriate
- ☑ References, proper citations of ideas and input of others
- ☒ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 6.5 ↑ 7

Opp.: CHINA — 5

Physics ±3 +1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0

- ☑ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 0

- ☐ Response to the reporter's solution
- ☑ Shows the strong and weak points of the report
- ☑ Finds shortcomings or errors in the report
- ☒ Relevance of the questions — irrelevant questions already dealt from presentation
- ☐ Contribution to the discussion

Final Grade: Opponent 6

Rev.: SWEDEN — 5

Physics ±3 +1½

- ☑ Correct and relevant physics
- ☑ Scientific approach
- ☑ Validity of conclusions
- ☑ Accurate answers

Presentation ±1 0

- ☑ Clear and understandable
- ☑ Appropriate manner
- ☑ Overall impression

Reviewer ±1 +½

- ☑ Provides a thorough review of report and discussion
- ☑ Expresses own opinion about topics presented or discussed
- ☑ Relevance of questions to both the reporter and the opponent
- ☑ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 7

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 4 Stage: 1 Problem no.: 13

Juror: M.H. Kwon Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

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• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

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- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: ____ 5

Physics ±3 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 0

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 5

Opp.: ____ 5

Physics ±3 +1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 -1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 0

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 6

Rev.: ____ 5

Physics ±3 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 +1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 0

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 6

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 4 Stage: 1 Problem no.: 13

Juror: Rainer Reichle Signature: Rainer Reichle

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: JR — 5

Physics ±3 — 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — -0,5

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — 0,5

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 5

Opp.: CN — 5

Physics ±3 — 1,5

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☑ Overall impression

Opponent ±1 — 0,5

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 7

Rev.: CH — 5

Physics ±3 — 1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0,5

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — -1

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 6

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1-1 Room: 4 Stage: 1 Problem no.: 13

Juror: Shchetnikov Signature: [signature]

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Iran — 5

Physics ±3 -1.5

- [x] Correct and relevant physics
- [x] Scientific approach
- [ ] Validity of conclusions
- [ ] Accurate answers

Presentation ±1 +0.5

- [ ] Clear and understandable
- [ ] Appropriate manner
- [ ] Overall impression

Reporter ±1 0

- [x] Quality of experimental technique(s)
- [ ] Structure
- [ ] Explanation of formulae and symbols
- [x] Appropriate models, conformity of dimensions
- [ ] Slides, on-site experiments, audio, video, as appropriate
- [ ] References, proper citations of ideas and input of others
- [ ] Novelty of the report
- [ ] Contribution to the discussion

Final Grade: Reporter 4

Opp.: China — 5

Physics ±3 +0

- [x] Correct and relevant physics
- [ ] Scientific approach
- [ ] Validity of conclusions
- [x] Accurate answers

Presentation ±1 0

- [ ] Clear and understandable
- [ ] Appropriate manner
- [ ] Overall impression

Opponent ±1 0

- [ ] Response to the reporter's solution
- [ ] Shows the strong and weak points of the report
- [ ] Finds shortcomings or errors in the report
- [ ] Relevance of the questions
- [ ] Contribution to the discussion

Final Grade: Opponent 5

Rev.: Switzerland — 5

Physics ±3 0

- [ ] Correct and relevant physics
- [ ] Scientific approach
- [x] Validity of conclusions
- [ ] Accurate answers

Presentation ±1 +0.5

- [x] Clear and understandable
- [x] Appropriate manner
- [ ] Overall impression

Reviewer ±1 +.5

- [x] Provides a thorough review of report and discussion
- [ ] Expresses own opinion about topics presented or discussed
- [ ] Relevance of questions to both the reporter and the opponent
- [ ] Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 6

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 4 Stage: 2 Problem no.: 10

Juror: AKyuldjiev Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** **and** ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** *and* ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: 5

Physics ±3 -0.7

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 -0.1

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 4

Opp.: 5

Physics ±3 0.2

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0.5

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 0.2

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 6

Rev.: 5

Physics ±3 +0.5

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 +0.3

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 +0.3

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 6

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 4 Stage: 2 Problem no.: 10

Juror: Kathryn Zealand Signature: [signature]

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: CHINA — 5

well explained but basic — 0

Physics ±3
- ☐ Correct and relevant physics
- ☑ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — +1
- ☑ Clear and understandable
- ☒ Appropriate manner — careful to agressive
- ☑ Overall impression — excellent ppt + explanations

don't just read slides + check videos and fins

Reporter ±1 — 0
- ☑ Quality of experimental technique(s)
- ☑ Structure
- ☑ Explanation of formulae and symbols
- ☑ Appropriate models, conformity of dimensions
- ☒ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others — on-slide references needed
- ☒ Novelty of the report — nothing novel
- ☑ Contribution to the discussion

Final Grade: Reporter — 6

Opp.: SWEDEN — 5

Physics ±3 — +½
- ☑ Correct and relevant physics
- ☐ Scientific approach
- ☑ Validity of conclusions
- ☑ Accurate answers

Presentation ±1 — 0
- ☑ Clear and understandable
- ☐ Appropriate manner — careful too agressive
- ☑ Overall impression

Opponent ±1 — +½
- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☑ Finds shortcomings or errors in the report
- ☑ Relevance of the questions
- ☐ Contribution to the discussion

good discussion on basic physics principles

need to discuss experimental graphs

Final Grade: Opponent — 6

Rev.: IRAN — 5

Physics ±3 — -1
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — +½
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — -½
- ☐ Provides a thorough review of report and discussion
- ☒ Expresses own opinion about topics presented or discussed
- ☑ Relevance of questions to both the reporter and the opponent — could ask better, have to explain!!
- ☐ Draws attention to points missed by the reporter or the opponent

didn't give his opinion on physics

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 4

Scoring Guidelines

Fight (Round no.): 1 Room: 4 Stage: 2 Problem no.: 10

Juror: M.H. Kwon Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: 5

Physics ±3 +1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 -1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 0

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 5

Opp.: 5

Physics ±3 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 0

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 6

Rev.: 5

Physics ±3 2

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 0

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 7

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): #1 Room: 4 Stage: 2 Problem no.: 10

Juror: Ramin Reichelt Signature: Ramin Reichelt

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** *and* ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: CN — 5

Physics ±3 -1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 +1

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 4

Opp.: CH — 5

Physics ±3 -1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 +0,5

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 5

Rev.: JR — 5

Physics ±3 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0,5

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 0,5

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 6

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 2 Room: 4 Stage: 2 Problem no.: 10

Juror: Shchetnikov Signature: [signature]

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** *and* ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: China		**Opp.:** Switzerland		**Rev.:** Iran	
	5		5		5
Physics ±3	-0.5	**Physics ±3**	+0.5	**Physics ±3**	0
☒ Correct and relevant physics		☐ Correct and relevant physics		☐ Correct and relevant physics	
☐ Scientific approach		☐ Scientific approach		☐ Scientific approach	
☐ Validity of conclusions		☐ Validity of conclusions		☐ Validity of conclusions	
☐ Accurate answers		☐ Accurate answers		☐ Accurate answers	
Presentation ±1	-0.5	**Presentation ±1**	+0.5	**Presentation ±1**	
☒ Clear and understandable		☐ Clear and understandable		☐ Clear and understandable	
☐ Appropriate manner		☐ Appropriate manner		☐ Appropriate manner	
☐ Overall impression		☐ Overall impression		☐ Overall impression	
Reporter ±1	-1	**Opponent ±1**	+1	**Reviewer ±1**	+0.5
☐ Quality of experimental technique(s)		☒ Response to the reporter's solution		☒ Provides a thorough review of report and discussion	
☒ Structure		☒ Shows the strong and weak points of the report		☐ Expresses own opinion about topics presented or discussed	
☐ Explanation of formulae and symbols		☐ Finds shortcomings or errors in the report		☒ Relevance of questions to both the reporter and the opponent	
☒ Appropriate models, conformity of dimensions		☐ Relevance of the questions		☐ Draws attention to points missed by the reporter or the opponent	
☐ Slides, on-site experiments, audio, video, as appropriate		☐ Contribution to the discussion			
☐ References, proper citations of ideas and input of others					
☐ Novelty of the report					
☐ Contribution to the discussion					
Final Grade: Reporter	4	Final Grade: Opponent	7	Final Grade: Reviewer	6

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Revised after IOC feedback and approved by EC on 2011-11-03

rejected 11.15

Scoring Guidelines

Fight (Round no.): 1 Room: 4 Stage: 3 Problem no.: 2

Juror: AKyuldjiev Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: 5

Physics ±3 −2

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 +0.2

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 3 +

Opp.: 5

Physics ±3 −1.8

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 3 +

Rev.: 5

Physics ±3 +0.8

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 +1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 +1

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 8 −

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 4 Stage: 3 Problem no.: 2

Juror: Karl Zeilard Signature: KZell

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

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- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: SWEDEN — 5

Physically, why is L relevant? friction on gas? = viscosity

Physics ±3 clear but basic. −1½

- ☐ Correct and relevant physics
- ☑ Scientific approach
- ☐ Validity of conclusions Why
- ☐ Accurate answers

other attributes of smoke

Presentation ±1 +½

- ☑ Clear and understandable
- ☒ Appropriate manner - don't get defensive
- ☐ Overall impression

Reporter ±1 0

- ☑ Quality of experimental technique(s)
- ☑ Structure
- ☒ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☑ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others on-slide references
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 4

Opp.: IRAN — 5

need to engage w/ her theory

Physics ±3 +1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0

- ☑ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 0

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

if the lack of "physical system" was most important, why not start discussion with that?

Final Grade: Opponent 6

Rev.: CHINA — 5

good physics

Physics ±3 +1½

- ☑ Correct and relevant physics
- ☑ Scientific approach
- ☑ Validity of conclusions
- ☑ Accurate answers

Presentation ±1 0

- ☐ Clear and understandable
- ☐ Appropriate manner time!
- ☐ Overall impression

Reviewer ±1 +½

- ☐ Provides a thorough review of report and discussion
- ☑ Expresses own opinion about topics presented or discussed
- ☑ Relevance of questions to both the reporter and the opponent
- ☑ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 7

Scoring Guidelines

Fight (Round no.): 1 Room: 4 Stage: 3 Problem no.: _____

Juror: M.H. Kwon Signature: [signature]

A report should include:

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• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter, opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Phyllis Barth	**Opp.:** Yasamin	**Rev.:** Kahan Lu
5	5	5
Physics ±3 0	**Physics ±3** +1	**Physics ±3** +2
☐ Correct and relevant physics	☐ Correct and relevant physics	☐ Correct and relevant physics
☐ Scientific approach	☐ Scientific approach	☐ Scientific approach
☐ Validity of conclusions	☐ Validity of conclusions	☐ Validity of conclusions
☐ Accurate answers	☐ Accurate answers	☐ Accurate answers
Presentation ±1 +1	**Presentation ±1** 0	**Presentation ±1** +1
☐ Clear and understandable	☐ Clear and understandable	☐ Clear and understandable
☐ Appropriate manner	☐ Appropriate manner	☐ Appropriate manner
☐ Overall impression	☐ Overall impression	☐ Overall impression
Reporter ±1 0	**Opponent ±1** 1	**Reviewer ±1** 2
☐ Quality of experimental technique(s)	☐ Response to the reporter's solution	☐ Provides a thorough review of report and discussion
☐ Structure	☐ Shows the strong and weak points of the report	☐ Expresses own opinion about topics presented or discussed
☐ Explanation of formulae and symbols	☐ Finds shortcomings or errors in the report	☐ Relevance of questions to both the reporter and the opponent
☐ Appropriate models, conformity of dimensions	☐ Relevance of the questions	☐ Draws attention to points missed by the reporter or the opponent
☐ Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	
☐ References, proper citations of ideas and input of others		
☐ Novelty of the report		
☐ Contribution to the discussion		
Final Grade: Reporter 6	Final Grade: Opponent 6	Final Grade: Reviewer 8

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): #1 Room: 4 Stage: 3 Problem no.: 2

Juror: Ramiro Reichle Signature: Ramiro Reichle

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** *and* ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics, presentation*** and for their ***specific role***.
- The ***reporter, opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: CH — 5

Physics ±3 — -1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — -0,5

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — 0

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 4

Opp.: JR — 5

Physics ±3 — -0,5

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 — +0,5

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent — 5

Rev.: CN — 5

Physics ±3 — 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — 1

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 7

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 4 Stage: 3 Problem no.: 2

Juror: Shchetnikov Signature: [signature]

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** **and** ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** *and* ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics, presentation*** and for their ***specific role***.
- The ***reporter, opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Switz. 5

Physics ±3 ~~-2~~ -1.5

- ☑ Correct and relevant physics
- ☑ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 ~~-0.5~~ 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 -0.5

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- – ☐ Appropriate models, conformity of dimensions
- (–) ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 3

Opp.: Iran 5

Physics ±3 ~~-1~~

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 -0.5

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1

- ☐ Response to the reporter's solution
- ☑ Shows the strong and weak points of the report
- ☑ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 3

Rev.: China 5

Physics ±3 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 1

- ☑ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 6

Revised after IOC feedback and approved by EC on 2011-11-03

Round: 1 Room: 5 Fight Assistants: Taweesak Chaiyakhan, Wanchaloem Poonsawat

	Stage 1			Stage 2			Stage 3			Stage 4		
Team	Kenya	Ukraine	Macao	Ukraine	Macao	kenya	Macao	kenya	Ukraine			
Juror	Rep	Opp	Rev	Rep	Opp	Rev	Rep	Opp	Rev	Rep	Opp	Rev
Philip O'Neill	3	6	5	6	7	3	4	5	6			
John Balcombe	3	6	5	6	6	3	3	2	3			
Mihály Hömöstrei	3	8	6	5	7	3	4	4	5			
Uno Uno	3	5	5	5	6	3	4	4	4			
Valiantsin Astashynski	3	4	5	7	7	3	4	4	5			
Acting Team Member	Nathan S Antrobus	Melnyk Eugene	Philip Nadeau P. Lagniton	Rogovoy Nikita	Jingyi Xie	Sousuke Namba	Chin Hok Leong	Iinga Wenjau	Rogovoy Nikita			
Rejected Problems	1			1			1					
Accepted Problem	6. Magnus glider			A. Liquid Film Motor			15. Moving brush					

Signature Fight Assistant: Wanchaloem Double-checked with Scoring Guidelines by second Fight Assistant (signature): Taweesak

(1)

Scoring Guidelines

Fight (Round no.): 1 Room: 5 Stage: 1 Problem no.: 6

Juror: O'NEILL Signature: Mgo Mill

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles and appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: KENYA — 5

Physics ±3 — -1
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — -1
- ☑ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 3

Opp.: UKRANE — 5

Physics ±3 — 0
- ☐ Correct and relevant physics
- ☑ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — .5
- ☑ Clear and understandable
- ☐ Appropriate manner
- ☑ Overall impression

Opponent ±1 — .5
- ☑ Response to the reporter's solution
- ☑ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☑ Relevance of the questions
- ☑ Contribution to the discussion

Final Grade: Opponent — 6

Rev.: MACAO — 5

Physics ±3 — 0
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0
- ☑ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — 0
- ☑ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☒ Relevance of questions to both the reporter and the opponent
- ☑ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 5

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 5 Stage: 1 Problem no.: 6

Juror: J. BALCOMBE Signature: [signature]

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** *and* ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: KENYA — 5

Physics ±3 −2.5

- ☒ Correct and relevant physics
- ☒ Scientific approach
- ☒ Validity of conclusions
- ☑ Accurate answers

Presentation ±1 +0.5

- ☑ Clear and understandable
- ☑ Appropriate manner
- ☒ Overall impression

Reporter ±1 0

- ☒ Quality of experimental technique(s)
- ☑ Structure
- ☒ Explanation of formulae and symbols
- ☒ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☒ References, proper citations of ideas and input of others
- ☒ Novelty of the report
- ☑ Contribution to the discussion

Final Grade: Reporter 3

Opp.: UKRAINE — 5

Physics ±3 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 +0.5

- ☑ Clear and understandable
- ☑ Appropriate manner
- ☐ Overall impression

Opponent ±1 +0.5

- ☑ Response to the reporter's solution
- ☑ Shows the strong and weak points of the report
- ☑ Finds shortcomings or errors in the report
- ☑ Relevance of the questions
- ☑ Contribution to the discussion

Final Grade: Opponent 6

Rev.: MACAO — 5

Physics ±3 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0

- ☑ Clear and understandable
- ☑ Appropriate manner
- ☒ Overall impression

Reviewer ±1 0

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☑ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 5

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 5 Stage: 1 Problem no.: 6

Juror: HÖMÖSTREI / MIHÁLY Signature: [signature]

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter, opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: KENYA — 5

Physics ±3 — −1
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — −1
- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 3

Opp.: Ukraine — 5

Physics ±3 — +2
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 — +1
- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent — 8

Rev.: Macao — 5

Physics ±3 — +1
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — 0
- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 6

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 5 Stage: 1 Problem no.: 2

Juror: Uno Signature: [signature]

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories***, ***principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Kenya 5

Physics ±3
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1
- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols −1
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate +1
- ☑ References, proper citations of ideas and input of others
- ☑ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 3

Opp.: Ukraine 5

Physics ±3
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☑ Overall impression

Opponent ±1
- ☐ Response to the reporter's solution
- ☑ Shows the strong and weak points of the report
- ☑ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 5

Rev.: Macao 5

Physics ±3
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1
- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 5

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 5 Stage: 1 Problem no.: 6

Juror: Astashynski Signature: B.

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Kenya — 5

Physics ±3 — -1

- ☐ Correct and relevant physics
- ☒ Scientific approach
- ☐ Validity of conclusions
- ☒ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — -1

- ☐ Quality of experimental technique(s)
- ☒ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☒ References, proper citations of ideas and input of others
- ☒ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 3

Opp.: Ukraine — 5

Physics ±3 — 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — -0.5

- ☒ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 — -0.5

- ☐ Response to the reporter's solution
- ☒ Shows the strong and weak points of the report
- ☒ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☒ Contribution to the discussion

Final Grade: Opponent — 4

Rev.: Macao — 5

Physics ±3 — 0.2

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☒ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — 0

- ☒ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☒ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 5

Revised after IOC feedback and approved by EC on 2011-11-03

(2)

Scoring Guidelines

Fight (Round no.): 11 Room: 5 Stage: 2 Problem no.: 4

Juror: O'NEILL Signature: OMeill

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories***, ***principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: UKRAINE — 5

Physics ±3 — 1
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — -½
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — +½
- ☑ Quality of experimental technique(s)
- ☑ Structure
- ☑ Explanation of formulae and symbols
- ☑ Appropriate models, conformity of dimensions
- ☑ Slides, on-site experiments, audio, video, as appropriate
- ☑ References, proper citations of ideas and input of others
- ☒ Novelty of the report
- ☑ Contribution to the discussion

Final Grade: Reporter — 6

Opp.: MACAO — 5

Physics ±3 — 0
- ☐ Correct and relevant physics
- ☑ Scientific approach
- ☑ Validity of conclusions
- ☑ Accurate answers

Presentation ±1 — +1
- ☑ Clear and understandable
- ☑ Appropriate manner
- ☐ Overall impression

Opponent ±1 — +1
- ☑ Response to the reporter's solution
- ☑ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☑ Relevance of the questions
- ☑ Contribution to the discussion

Final Grade: Opponent — 7

Rev.: KENYA — 5

Physics ±3 — -1
- ☑ Correct and relevant physics
- ☑ Scientific approach
- ☑ Validity of conclusions
- ☑ Accurate answers

Presentation ±1 — -1
- ☑ Clear and understandable
- ☑ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — 0
- ☐ Provides a thorough review of report and discussion
- ☒ Expresses own opinion about topics presented or discussed
- ☒ Relevance of questions to both the reporter and the opponent
- ☒ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 3

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 5 Stage: 2 Problem no.: 4

Juror: J. BALCOMBE Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories, principles*** *and* ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

LACK OF QUANTITATIVE DATA!

Rep.: UKRAINE — 5

Physics ±3 +0.5

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☑ Accurate answers

Presentation ±1 0

- ☒ Clear and understandable
- ☑ Appropriate manner
- ☐ Overall impression

Reporter ±1 +0.5

- ☐ Quality of experimental technique(s)
- ☑ Structure
- ☒ Explanation of formulae and symbols
- ☒ Appropriate models, conformity of dimensions
- ☑ Slides, on-site experiments, audio, video, as appropriate
- ☑ References, proper citations of ideas and input of others
- ☑ Novelty of the report
- ☑ Contribution to the discussion

Final Grade: Reporter ~~6.5~~ → 6

Opp.: MACAO — 5

Physics ±3 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 +0.5

- ☑ Clear and understandable
- ☑ Appropriate manner
- ☐ Overall impression

Opponent ±1 +0.5

- ☐ Response to the reporter's solution
- ☑ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☑ Relevance of the questions
- ☑ Contribution to the discussion

Final Grade: Opponent 6

Rev.: KENYA — 5

Physics ±3 -1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 -0.5

- ☒ Clear and understandable
- ☑ Appropriate manner
- ☒ Overall impression

Reviewer ±1 -0.5

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☒ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 3

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 5 Stage: 2 Problem no.: 4

Juror: HÖMÖSTREI, MIHÁLY Signature: [signature]

A report should include:
• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:
• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:
• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** *and* ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics, presentation*** and for their ***specific role***.
- The ***reporter, opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Ukraine — 5

Physics ±3 — 0
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — 0
- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 5

Opp.: Macao — 5

Physics ±3 — +1
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — +0,5
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 — +0,5
- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent — 7

Rev.: Kenya — 5

Physics ±3 — 0
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — -1
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — -1
- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 3

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): _____ Room: 5 Stage: 2 Problem no.: 4

Juror: Uno Signature: [signature]

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Ukraine — 5

Physics ±3 [ ]
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers −1

Presentation ±1 [ ]
- ☐ Clear and understandable
- ☐ Appropriate manner −1
- ☐ Overall impression

Reporter ±1 [ ]
- ☐ Quality of experimental technique(s)
- ☑ Structure +1
- ☐ Explanation of formulae and symbols X
- ☐ Appropriate models, conformity of dimensions X
- ☑ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others X
- ☐ Novelty of the report X
- ☐ Contribution to the discussion

Final Grade: Reporter: 5

Opp.: Macao — 5

Physics ±3 [ ]
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers +1

Presentation ±1 [ ]
- ☐ Clear and understandable
- ☐ Appropriate manner −1
- ☑ Overall impression

Opponent ±1 [ ]
- ☐ Response to the reporter's solution +1
- ☐ Shows the strong and weak points of the report ✓
- ☐ Finds shortcomings or errors in the report ✓
- ☐ Relevance of the questions ✓
- ☐ Contribution to the discussion ✓

Final Grade: Opponent: 6

Rev.: Kenya — 5

Physics ±3 [ ]
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions −2
- ☐ Accurate answers

Presentation ±1 [ ]
- ☐ Clear and understandable
- ☐ Appropriate manner −1
- ☐ Overall impression

Reviewer ±1 [ ]
- ☐ Provides a thorough review of report and discussion X
- ☐ Expresses own opinion about topics presented or discussed ✓
- ☐ Relevance of questions to both the reporter and the opponent ✓
- ☐ Draws attention to points missed by the reporter or the opponent −1

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer: 3

Scoring Guidelines

Fight (Round no.): 1 Room: 5 Stage: 2 Problem no.: 4

Juror: Astashynski Signature: B. A

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories***, ***principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Ukraine — 5

Physics ±3 +0.5

- [x] Correct and relevant physics
- [x] Scientific approach
- [ ] Validity of conclusions
- [ ] Accurate answers

Presentation ±1 0

- [ ] Clear and understandable
- [ ] Appropriate manner
- [ ] Overall impression

Reporter ±1 +1

- [ ] Quality of experimental technique(s)
- [x] Structure
- [ ] Explanation of formulae and symbols
- [ ] Appropriate models, conformity of dimensions
- [ ] Slides, on-site experiments, audio, video, as appropriate
- [x] References, proper citations of ideas and input of others
- [ ] Novelty of the report
- [ ] Contribution to the discussion

Final Grade: Reporter 7

Opp.: Macau — 5

Physics ±3 +1

- [x] Correct and relevant physics
- [ ] Scientific approach
- [ ] Validity of conclusions
- [ ] Accurate answers

Presentation ±1 0

- [ ] Clear and understandable
- [ ] Appropriate manner
- [ ] Overall impression

Opponent ±1 +1

- [ ] Response to the reporter's solution
- [ ] Shows the strong and weak points of the report
- [ ] Finds shortcomings or errors in the report
- [x] Relevance of the questions
- [x] Contribution to the discussion

Final Grade: Opponent 7

Rev.: Kenya — 5

Physics ±3 -2

- [x] Correct and relevant physics
- [ ] Scientific approach
- [ ] Validity of conclusions
- [ ] Accurate answers

Presentation ±1 0

- [ ] Clear and understandable
- [ ] Appropriate manner
- [ ] Overall impression

Reviewer ±1 0

- [ ] Provides a thorough review of report and discussion
- [ ] Expresses own opinion about topics presented or discussed
- [x] Relevance of questions to both the reporter and the opponent
- [ ] Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 3

Revised after IOC feedback and approved by EC on 2011-11-03

3

Scoring Guidelines

Fight (Round no.): 1 Room: 5 Stage: 3 Problem no.: 15

Juror: O'NEILL Signature: O'N

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** **and** ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories, principles*** *and* ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: MACAO — 5

Physics ±3 — -½

- ☒ Correct and relevant physics
- ☑ Scientific approach
- ☑ Validity of conclusions
- ☒ Accurate answers

Presentation ±1 — -½

- ☑ Clear and understandable
- ☑ Appropriate manner
- ☑ Overall impression

Reporter ±1 — 0

- ☐ Quality of experimental technique(s)
- ☑ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☑ Slides, on-site experiments, audio, video, as appropriate
- ☑ References, proper citations of ideas and input of others
- ☒ Novelty of the report
- ☑ Contribution to the discussion

Final Grade: Reporter — 4

Opp.: KENYA — 5

Physics ±3 — -½

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☑ Clear and understandable
- ☑ Appropriate manner
- ☑ Overall impression

Opponent ±1 — ½

- ☑ Response to the reporter's solution
- ☑ Shows the strong and weak points of the report
- ☑ Finds shortcomings or errors in the report
- ☑ Relevance of the questions
- ☑ Contribution to the discussion

Final Grade: Opponent — 5

Rev.: UKRANE — 5

Physics ±3 — ½

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☑ Clear and understandable
- ☑ Appropriate manner
- ☑ Overall impression

Reviewer ±1 — ½

- ☐ Provides a thorough review of report and discussion
- ☑ Expresses own opinion about topics presented or discussed
- ☑ Relevance of questions to both the reporter and the opponent
- ☑ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 6

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 5 Stage: 3 Problem no.: 15

Juror: J. BALCOMBE Signature: J. Balcombe

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: MACAO — 5

Physics ±3 — −1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☒ Clear and understandable
- ☐ Appropriate manner
- ☒ Overall impression

Reporter ±1 — −1

- ☒ Quality of experimental technique(s)
- ☐ Structure
- ☒ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☒ Slides, on-site experiments, audio, video, as appropriate
- ☒ References, proper citations of ideas and input of others
- ☒ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 3

Opp.: KENYA — 5

Physics ±3 — −2

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — −1

- ☒ Clear and understandable
- ☐ Appropriate manner
- ☒ Overall impression

Opponent ±1 — 0

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent — 2

Rev.: UKRAINE — 5

Physics ±3 — −1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☒ Clear and understandable
- ☐ Appropriate manner
- ☒ Overall impression

Reviewer ±1 — −1

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☒ Relevance of questions to both the reporter and the opponent
- ☒ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 3

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 5 Stage: 3 Problem no.: 15

Juror: Höhlöstrei, Hindrik Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Kazan — 5

Physics ±3 — 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — −1

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 4

Opp.: Kenya — 5

Physics ±3 — 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 — -1

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent — 4

Rev.: Ukraine — 5

Physics ±3 — 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — 0

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 5

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 5 Stage: 3 Problem no.: 15

Juror: Uno Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories, principles*** *and* ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: MaCao 5

Physics ±3
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1
- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 4

Opp.: Kenya 5

Physics ±3
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1
- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions ✓
- ☐ Contribution to the discussion

Final Grade: Opponent 4

Rev.: Ukraine 5

Physics ±3
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1
- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 4

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 5 Stage: 3 Problem no.: 15

Juror: Astashynski Signature: [signature]

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

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- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Macao — 5

Physics ±3 — -1

- [x] Correct and relevant physics
- [ ] Scientific approach
- [ ] Validity of conclusions
- [x] Accurate answers

Presentation ±1 — 0

- [ ] Clear and understandable
- [ ] Appropriate manner
- [ ] Overall impression

Reporter ±1 — 0

- [ ] Quality of experimental technique(s)
- [x] Structure
- [ ] Explanation of formulae and symbols
- [ ] Appropriate models, conformity of dimensions
- [ ] Slides, on-site experiments, audio, video, as appropriate
- [ ] References, proper citations of ideas and input of others
- [ ] Novelty of the report
- [ ] Contribution to the discussion

Final Grade: Reporter — 4

Opp.: Kenya — 5

Physics ±3 — -1

- [ ] Correct and relevant physics
- [ ] Scientific approach
- [x] Validity of conclusions
- [ ] Accurate answers

Presentation ±1 — 0

- [ ] Clear and understandable
- [x] Appropriate manner
- [ ] Overall impression

Opponent ±1 — 0

- [x] Response to the reporter's solution
- [ ] Shows the strong and weak points of the report
- [ ] Finds shortcomings or errors in the report
- [x] Relevance of the questions
- [ ] Contribution to the discussion

Final Grade: Opponent — 4

Rev.: Ukraine — 5

Physics ±3 — 0

- [ ] Correct and relevant physics
- [ ] Scientific approach
- [ ] Validity of conclusions
- [ ] Accurate answers

Presentation ±1 — 0

- [ ] Clear and understandable
- [ ] Appropriate manner
- [ ] Overall impression

Reviewer ±1 — 0

- [ ] Provides a thorough review of report and discussion
- [ ] Expresses own opinion about topics presented or discussed
- [ ] Relevance of questions to both the reporter and the opponent
- [ ] Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 5

Revised after IOC feedback and approved by EC on 2011-11-03

Round: 1 Room: 6 Fight Assistants:.....

	Stage 1			Stage 2			Stage 3			Stage 4		
Team	Sweden	Taiwan	Czech. Rep	Taiwan	Czech. Rep	Sweden	Czech	Sweden.	Taiwan			
Juror	Rep	Opp	Rev	Rep	Opp	Rev	Rep	Opp	Rev	Rep	Opp	Rev
Ginka Exner	5	7	6	6	6	7	6	4	7			
Nirut Pussadee	5	5	6	5	7	5	5	6	7			
Olga Inisheva	5	5	5	6	7	8	5	6	7			
Susan Napier	5	5	4	5	7	8	6	6	7			
Ilya Martchenko	7	8	6	5	5	7	5	4	9			
Julian												
Apichat.												
Acting Team Member	Fransiska	Hao Yu-ku	Daniel	Samuel Kan	Pavel Ber	Alexander Kik.	Petr Sosna	Tooma Liiv	Yin-chieh-cheng			
Rejected Problems	-											
Accepted Problem	3			5			9					

Signature Fight Assistant: Sunforee ..... Double-checked with Scoring Guidelines by second Fight Assistant (signature): Jindra

Scoring Guidelines

Fight (Round no.): 1 Room: 6 Stage: 1 Problem no.: 3

Juror: Ginca Exner Signature: [signature]

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** **and** ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories, principles*** *and* ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: SE — 5

Physics ±3 —
- ~ ☐ Correct and relevant physics
- ~ ☐ Scientific approach
- + ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 —
- − ☐ Clear and understandable
- ~ ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 —
- ~ ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- + ☐ Slides, on-site experiments, audio, video, as appropriate
- ~ ☐ References, proper citations of ideas and input of others
- − ☐ Novelty of the report
- ~ ☐ Contribution to the discussion

Final Grade: Reporter 5

Opp.: TW — 5

Physics ±3 —
- ~ ☐ Correct and relevant physics
- + ☐ Scientific approach
- ~ ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 —
- ~ ☐ Clear and understandable
- + ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 —
- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ~ ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 7

Rev.: CR — 5

Physics ±3 —
- ~ ☐ Correct and relevant physics
- − ☐ Scientific approach
- ~ ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 —
- − ☐ Clear and understandable
- − ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 —
- ~ ☐ Provides a thorough review of report and discussion
- − ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 6

Revised after IOC feedback and approved by EC on 2011-11-03

~ - partially

Scoring Guidelines

Fight (Round no.): 1 Room: 6 Stage: 1 Problem no.: 3

Juror: Nirut Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: SE — 5

Physics ±3
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1
- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 5

Opp.: TW — 5

Physics ±3
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1
- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 5

Rev.: CZ — 5

Physics ±3 — 1
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1
- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 6

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 6 Stage: 1 Problem no.: 3

Juror: Olga Inisheva Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Sweeden — 5

Physics ±3 — -0,5

- ☐ Correct and relevant physics experiment
- ☑ Scientific approach -0,5
- ☑ Validity of conclusions
- ☑ Accurate answers

Presentation ±1 — +0,25

- ☑ Clear and understandable
- ☐ Appropriate manner
- ☒ Overall impression

Reporter ±1 — +0,25

- ☑ Quality of experimental technique(s)
- ☐ Structure
- ☑ Explanation of formulae and symbols
- ☑ Appropriate models, conformity of dimensions
- ☒ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ⊟ Novelty of the report
- ☒ Contribution to the discussion +0,25

Final Grade: Reporter **5**

Opp.: ~~Thailand~~ Taiwan — 5

Physics ±3 — 0

- ☒ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — -0,25

- ⊟ Clear and understandable -0,25
- ⊟ Appropriate manner
- ☐ Overall impression

Opponent ±1 — +0,5

- ☒ Response to the reporter's solution -0,25
- ☐ Shows the strong and weak points of the report
- ☒ Finds shortcomings or errors in the report +0,5
- ☐ Relevance of the questions
- ☒ Contribution to the discussion +0,25

Final Grade: Opponent **5**

Rev.: Greek Rep. — 5

Physics ±3 — 0,25

- ☒ Correct and relevant physics +0,25
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — +0,25

- ☒ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — -0,25

- ☐ Provides a thorough review of report and discussion 0
- ⊟ Expresses own opinion about topics presented or discussed -0,25
- ☑ Relevance of questions to both the reporter and the opponent 0
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer **5**

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 6 Stage: 1 Problem no.: 3

Juror: SUE NAPIER Signature: SNapier

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics, presentation*** and for their ***specific role***.
- The ***reporter, opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Sweden Fransiska Aspegren — 5

Physics ±3 — 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable Average
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — 0

- ☑ Quality of experimental technique(s)
- ☐ Structure Good.
- ☐ Explanation of formulae and symbols Not always done.
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others Not seen
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 5

Opp.: Taiwan Hao yu ku — 5

Physics ±3 — 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression Not ready to start

Opponent ±1 — 0

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☑ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent — 5

Rev.: Czech. Daniel. Ruchly. — 5

Physics ±3 — 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — -½

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression Not ready to start.

Reviewer ±1 — -½

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed Limited here.
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 4

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 6 Stage: 1 Problem no.: 3

Juror: Ryo MARTCHENKO Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Francisko Aspegren Sweden	5	**Opp.:** Hao Yu Ku Taiwan	5	**Rev.:** Daniel Rychlý Czech Rep.	5
Physics ±3	+2	**Physics ±3**	+2	**Physics ±3**	+1
☐ Correct and relevant physics		☐ Correct and relevant physics		☐ Correct and relevant physics	
☐ Scientific approach		☐ Scientific approach		☐ Scientific approach	
☐ Validity of conclusions		☐ Validity of conclusions		☐ Validity of conclusions	
☐ Accurate answers		☐ Accurate answers		☐ Accurate answers	
Presentation ±1	0	**Presentation ±1**	0	**Presentation ±1**	0
☐ Clear and understandable		☐ Clear and understandable		☐ Clear and understandable	
☐ Appropriate manner		☐ Appropriate manner		☐ Appropriate manner	
☐ Overall impression		☐ Overall impression		☐ Overall impression	
Reporter ±1	0	**Opponent ±1**	+1	**Reviewer ±1**	0
☐ Quality of experimental technique(s)		☐ Response to the reporter's solution		☐ Provides a thorough review of report and discussion	
☐ Structure		☐ Shows the strong and weak points of the report		☐ Expresses own opinion about topics presented or discussed	
☐ Explanation of formulae and symbols		☐ Finds shortcomings or errors in the report		☐ Relevance of questions to both the reporter and the opponent	
☐ Appropriate models, conformity of dimensions		☐ Relevance of the questions		☐ Draws attention to points missed by the reporter or the opponent	
☐ Slides, on-site experiments, audio, video, as appropriate		☐ Contribution to the discussion			
☐ References, proper citations of ideas and input of others					
☐ Novelty of the report					
☐ Contribution to the discussion					
Final Grade: Reporter	7	Final Grade: Opponent	8	Final Grade: Reviewer	6

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 6 Stage: 2 Problem no.: 5

Juror: Ginka Exner Signature: [signature]

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: TW — 5

Physics ±3

- + ☐ Correct and relevant physics
- + ☐ Scientific approach
- ~ ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1

- + ☐ Clear and understandable
- ~ ☐ Appropriate manner
- ~ ☐ Overall impression

Reporter ±1

- ☐ Quality of experimental technique(s)
- ~ ☐ Structure
- − ☐ Explanation of formulae and symbols
- − ☐ Appropriate models, conformity of dimensions
- ~ ☐ Slides, on-site experiments, audio, video, as appropriate
- + ☐ References, proper citations of ideas and input of others
- − ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 6

Opp.: CZ — 5

Physics ±3

- ~ ☐ Correct and relevant physics
- − ☐ Scientific approach
- ~ ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1

- → ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1

- ☐ Response to the reporter's solution
- ~ ☐ Shows the strong and weak points of the report
- + ☐ Finds shortcomings or errors in the report
- ~ ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 6

Rev.: SE — 5

Physics ±3

- + ☐ Correct and relevant physics
- ~ ☐ Scientific approach
- ☐ Validity of conclusions
- ~ ☐ Accurate answers

Presentation ±1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1

- + ☐ Provides a thorough review of report and discussion
- ~ ☐ Expresses own opinion about topics presented or discussed
- ~ ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 7

Revised after IOC feedback and approved by EC on 2011-11-03

~ - partially

Scoring Guidelines

Fight (Round no.): 1 Room: 6 Stage: 2 Problem no.: 5

Juror: Nirut Signature: Nirut

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: TW — 5

Physics ±3

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 5

Opp.: CZ — 5

Physics ±3 — 2

- ☑ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☑ Accurate answers

Presentation ±1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☑ Overall impression

Opponent ±1

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 7

Rev.: SE — 5

Physics ±3

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 5

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 6 Stage: 2 Problem no.: 5

Juror: Olga Inisheva Signature: Olga

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Taiwan — 5

Physics ±3 +0,5
- ☐ Correct and relevant physics (experiment)
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☒ Accurate answers

Presentation ±1 +0,25
- ☒ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 +0,25
- ☒ Quality of experimental technique(s)
- ☐ Structure
- ☒ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☒ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☒ Novelty of the report
- ☒ Contribution to the discussion

Final Grade: Reporter 6

Opp.: CzRep — 5

Physics ±3 +0,5
- ☒ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 +1
- ☒ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 +0,5
- ☒ Response to the reporter's solution
- ☒ Shows the strong and weak points of the report
- ☒ Finds shortcomings or errors in the report
- ☒ Relevance of the questions
- ☒ Contribution to the discussion

Final Grade: Opponent 7

Rev.: Sweden — 5

Physics ±3 +1
- ☒ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 +1
- ☒ Clear and understandable
- ☐ Appropriate manner
- ☒ Overall impression

Reviewer ±1 +1
- ☒ Provides a thorough review of report and discussion
- ☒ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☒ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 8

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 6 Stage: 2 Problem no.: 5

Juror: SUE NAPIER Signature: S Napier

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics, presentation*** and for their ***specific role***.
- The ***reporter, opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: TAIWAN SAMUEL ICAN — 5

Physics ±3 — 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — 0

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols Not done clearly - too fast
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 5

Opp.: Czech PAULA BERESOVA — 5

Physics ±3 — +½

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — +½

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 — +1

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent — 7

Rev.: Sweden. ALEXANDER AKESSON — 5

Physics ±3 — +½

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — +½

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — +1

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 8

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 6 Stage: 2 Problem no.: 5

Juror: Olga MARKICHENKO Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Taiwan Samuel Yan — 5

Physics ±3 — 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — 0

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 5

Opp.: Czech Rep. Pavla Bérešová — 5

Physics ±3 — 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — -1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 — +1

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent — 5

Rev.: Sweden Aleksander Alsesson — 5

Physics ±3 — +1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — +1

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 7

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 6 Stage: 3 Problem no.: 9

Juror: Gina Exner Signature: [signature]

A report should include:
• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:
• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:
• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics, presentation*** and for their ***specific role***.
- The ***reporter, opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: GZ — 5

Physics ±3
- ~ ☐ Correct and relevant physics
- ☐ Scientific approach
- ~ ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1
- + ☐ Clear and understandable
- + ☐ Appropriate manner
- + ☐ Overall impression

Reporter ±1
- ~ ☐ Quality of experimental technique(s)
- ~ ☐ Structure
- − ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- + ☐ References, proper citations of ideas and input of others
- − ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter: 6

Opp.: SE — 5

Physics ±3
- ~ ☐ Correct and relevant physics
- ☐ Scientific approach
- ~ ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1
- − ☐ Clear and understandable
- ~ ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1
- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent: 4

Rev.: TW — 5

Physics ±3
- ~ ☐ Correct and relevant physics
- ☐ Scientific approach
- + ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1
- + ☐ Clear and understandable
- ☐ Appropriate manner
- + ☐ Overall impression

Reviewer ±1
- + ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer: 7

Revised after IOC feedback and approved by EC on 2011-11-03

~ partially

Scoring Guidelines

Fight (Round no.): 1 Room: 6 Stage: 3 Problem no.: 9

Juror: Nirut Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: CZ — 5

Physics ±3

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 5

Opp.: SE — 5

Physics ±3 — 1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1

Opponent ±1

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 6

Rev.: TW — 5

Physics ±3 — 1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1

Reviewer ±1 — 1

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 7

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 6 Stage: 3 Problem no.: 9

Juror: Olga Inisheva Signature: [signature]

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: CzRep — 5

Physics ±3 — 0

- [x] Correct and relevant physics
- [x] Scientific approach
- [ ] Validity of conclusions
- [ ] Accurate answers

experiment

Presentation ±1 — 0

- [x] Clear and understandable
- [x] Appropriate manner
- [x] Overall impression

Reporter ±1 — 0

- [ ] Quality of experimental technique(s)
- [x] Structure
- [x] Explanation of formulae and symbols
- [ ] Appropriate models, conformity of dimensions
- [x] Slides, on-site experiments, audio, video, as appropriate
- [ ] References, proper citations of ideas and input of others
- [x] Novelty of the report
- [x] Contribution to the discussion

Final Grade: Reporter — 5

Opp.: Sweden — 5

Physics ±3 — +0,25

- [x] Correct and relevant physics
- [ ] Scientific approach
- [ ] Validity of conclusions
- [ ] Accurate answers

Presentation ±1 —

- [x] Clear and understandable
- [ ] Appropriate manner
- [ ] Overall impression

Opponent ±1 — +0,5

- [ ] Response to the reporter's solution
- [x] Shows the strong and weak points of the report
- [ ] Finds shortcomings or errors in the report
- [x] Relevance of the questions
- [x] Contribution to the discussion

Final Grade: Opponent — 6

Rev.: Taiwan — 5

Physics ±3 — +1

- [x] Correct and relevant physics
- [ ] Scientific approach
- [x] Validity of conclusions
- [x] Accurate answers

Presentation ±1 — +1

- [x] Clear and understandable
- [ ] Appropriate manner
- [x] Overall impression

Reviewer ±1 — +0,25

- [ ] Provides a thorough review of report and discussion
- [ ] Expresses own opinion about topics presented or discussed
- [x] Relevance of questions to both the reporter and the opponent
- [ ] Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 7

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 6 Stage: 3 Problem no.: 9

Juror: SUE NAPIER Signature: SNapier

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Czech Petr Sosna — 5

Physics ±3 — x2

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — x2

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — 0

- ☐ Quality of experimental technique(s)
- ☐ Structure Good.
- ☐ Explanation of formulae and symbols Mixed.
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 6

Opp.: Sweden. Toomas Liiv. — 5

Physics ±3 — 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — x2

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 — x2

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent — 6

Rev.: Taiwan. Yin-Chieh Cheng. — 5

Physics ±3 — +1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — -½

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression Too fast

Reviewer ±1 — +½

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 7

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 6 Stage: 3 Problem no.: 9

Juror: Ilya MARTCHENKO Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter, opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: ~~Petr Sosna~~ Czech Rep

5

Physics ±3 ±0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 0

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 5

Opp.: ~~Thomas Liv~~ Sweden

5

Physics ±3 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 -1

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 4

Rev.: ~~Yin-Chieh~~ Taiwan

5

Physics ±3 +3

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 +1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 0

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 9

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 7 Stage: 1 Problem no.: 3

Juror: Felicia Ullstad Signature: Felicia Ullstad

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Slovakia (Edward Dravkin) — 5

Physics ±3 +1

- ☐ Correct and relevant physics
- ☐ Scientific approach +
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 +1

- ☐ Quality of experimental technique(s) +
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate +
- ☐ References, proper citations of ideas and input of others +
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 7

Opp.: Belarus (Anton Rusakov) — 5

Physics ±3 +1

- ☐ Correct and relevant physics +
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0

- ☐ Clear and understandable +
- ☐ Appropriate manner + −
- ☐ Overall impression

Opponent ±1 0

- ☐ Response to the reporter's solution − −
- ☐ Shows the strong and weak points of the report +
- ☐ Finds shortcomings or errors in the report +
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 6

Rev.: Korea (Jiwoo Kim) — 5

Physics ±3 +2

- ☐ Correct and relevant physics +
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 +1

- ☐ Provides a thorough review of report and discussion +
- ☐ Expresses own opinion about topics presented or discussed +
- ☐ Relevance of questions to both the reporter and the opponent +
- ☐ Draws attention to points missed by the reporter or the opponent +

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 8

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 7 Stage: 1 Problem no.: 3

Juror: Lobyshev Signature: Vlobyshev

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics, presentation*** and for their ***specific role***.
- The ***reporter, opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Slovak — 5

Physics ±3 — 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 —

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — -1

- ☐ Quality of experimental technique(s) error
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 4

Opp.: Belarus — 5

Physics ±3 — +2

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — +1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 — -1

- ☐ Response to the reporter's solution T0
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent — 7

Rev.: Korea — 5

Physics ±3 — 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — +1 T

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 6

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 7 Stage: 1 Problem no.: 3

Juror: YE YEO Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Slovakia Eduard — 5

Physics ±3 — 0
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — -1
- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 4

Opp.: Belarus Anton — 5

Physics ±3 — 0
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 — +1
- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent — 6

Rev.: Korea Jiwoo — 5

Physics ±3 — 0
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — 0
- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 5

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 7 Stage: 1 Problem no.: 3

Juror: STANISLAV PANOS Signature: [signature]

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories, principles*** *and* ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: SLOVAKIA — 5

Physics ±3 — 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☒ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — +1

- ☒ Clear and understandable
- ☐ Appropriate manner
- ☒ Overall impression

Reporter ±1 — -1

- ☒ Quality of experimental technique(s)
- ☒ Structure
- ☐ Explanation of formulae and symbols
- ☒ Appropriate models, conformity of dimensions
- ☒ Slides, on-site experiments, audio, video, as appropriate, photos
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 5

Opp.: BELARUS — 5

Physics ±3 — 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — +1

- ☒ Clear and understandable
- ☒ Appropriate manner
- ☐ Overall impression

Opponent ±1 — +1

- ☐ Response to the reporter's solution
- ☒ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☒ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent — 7

Rev.: KOREA — 5

Physics ±3 — +2

- ☒ Correct and relevant physics
- ☐ Scientific approach
- ☒ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — +1

- ☒ Clear and understandable
- ☒ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — +1

- ☐ Provides a thorough review of report and discussion
- ☒ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 9

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 7 Stage: 1 Problem no.: 3

Juror: Dina Izadi Signature: [signature]

A report should include:
• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:
• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:
• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** **and** ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** *and* ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics, presentation*** and for their ***specific role***.
- The ***reporter, opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Edvard oravkin slovakia — 5

Physics ±3 — +1.5
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — +0.5
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — -0.5
- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 6

Opp.: Anton Rusanov Belarus — 5

Physics ±3 — 2
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0.5
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 — 0.5
- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent — 8

Rev.: Korea Jiwoo kim — 5

Physics ±3 — 2.5
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 1
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — 0.5
- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 9

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 7 Stage: 2 Problem no.: 6

Juror: Felicia Ullstad Signature: Felicia Ullstad

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter, opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Belarus — 5

Physics ±3 — +1

- ☐ Correct and relevant physics +
- ☐ Scientific approach + −
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — +0,5

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols −
- ☐ Appropriate models, conformity of dimensions +
- ☐ Slides, on-site experiments, audio, video, as appropriate +
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion +

Final Grade: Reporter — 6

Opp.: Korea — 5

Physics ±3 — +1

- ☐ Correct and relevant physics +
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☑ Overall impression

Opponent ±1 — 0

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion +

Final Grade: Opponent — 6

Rev.: Slovakia — 5

Physics ±3 — 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☑ Accurate answers

Presentation ±1 — -0,5

- ☐ Clear and understandable −
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — +0,5

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent +
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 5

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 7 Stage: 2 Problem no.: 6

Juror: Lobyshev Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** **and** ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories, principles*** *and* ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Belarus — 5

Physics ±3 +1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 +1

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 7

Opp.: Korea — 5

Physics ±3

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☑ Overall impression

Opponent ±1 +2

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 7

Rev.: Slovakia — 5

Physics ±3

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☑ Accurate answers

Presentation ±1 +1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 +1

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 7

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 7 Stage: 2 Problem no.: 6

Juror: YE YEO Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter, opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Belarus Daniil — 5

Physics ±3 — 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — 0

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 5

Opp.: Korea Ahn Cheong Kung — 5

Physics ±3 — +1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — +1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☑ Overall impression

Opponent ±1 — +1

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent — 8

Rev.: Slovakia Miroslav — 5

Physics ±3 — +1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☑ Accurate answers

Presentation ±1 — +1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — +1

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 8

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 7 Stage: 2 Problem no.: 6

Juror: STANISLAV PAVOS Signature: Pav-S

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Belarus — 5

Physics ±3 — 0

- ☒ Correct and relevant physics
- ☐ Scientific approach
- ☒ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — +1

- ☒ Clear and understandable
- ☒ Appropriate manner
- ☐ Overall impression

Reporter ±1 — 0

- ☒ Quality of experimental technique(s) 0
- ☒ Structure
- ☒ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☒ Slides, on-site experiments, audio, video, as appropriate graphs ☹
- ☐ References, proper citations of ideas and input of others
- ☒ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 6

Opp.: KOREA — 5

Physics ±3 — +1

- ☐ Correct and relevant physics
- ☒ Scientific approach
- ☒ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — +1

- ☒ Clear and understandable
- ☒ Appropriate manner
- ☐ Overall impression

Opponent ±1 — +1

- ☒ Response to the reporter's solution
- ☒ Shows the strong and weak points of the report
- ☒ Finds shortcomings or errors in the report
- ☒ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent — 8

Rev.: SLOVAKIA — 5

Physics ±3 — +1

- ☐ Correct and relevant physics
- ☒ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — +1

- ☒ Clear and understandable
- ☒ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — +1

- ☐ Provides a thorough review of report and discussion
- ☒ Expresses own opinion about topics presented or discussed
- ☒ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 8

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 7 Stage: 2 Problem no.: 6

Juror: Dina Izadi Signature: [signature]

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Daniel Yarmolich, Belarus — 5

Physics ±3 — 1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — -0.5

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — -0.5

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 5

Opp.: Cheong Gung, Korea — 5

Physics ±3 — 2

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0.5

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☑ Overall impression

Opponent ±1 — 0.5

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent — 8

Rev.: Miroslav Gasparek, Slovakia — 5

Physics ±3 — 1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0.5

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — 0.5

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 7

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 7 Stage: 3 Problem no.: 11

Juror: Felicia Ullstad Signature: Felicia Ullstad

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories***, ***principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Korea (Jinwoo Kim) — 5

Physics ±3 — −2

- ☐ Correct and relevant physics −
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner −
- ☐ Overall impression

Reporter ±1 — −1

- ☐ Quality of experimental technique(s) − −
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions −
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 2

Opp.: Slovakia (Ádám Orbán) — 5

Physics ±3 — +2

- ☐ Correct and relevant physics +
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers +

Presentation ±1 — −1

- ☐ Clear and understandable
- ☐ Appropriate manner − −
- ☐ Overall impression −

Opponent ±1 — +0.5

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report +
- ☐ Relevance of the questions +
- ☐ Contribution to the discussion

Final Grade: Opponent — 7

Rev.: Bekrus (Dmitry Baranov) — 5

Physics ±3 — +1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner −
- ☐ Overall impression

Reviewer ±1 — 0

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 6

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 7 Stage: 3 Problem no.: 11

Juror: Lobyshev Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Korea — 5

Physics ±3 — -2
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — 0
- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 3

Opp.: Slovakia — 5

Physics ±3 — +1
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☑ Overall impression

Opponent ±1 — +1
- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent — 7

Rev.: Belarus — 5

Physics ±3 — +1
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — +1
- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 7

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 7 Stage: 3 Problem no.: 11

Juror: YE YEO Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** **and** ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories, principles*** *and* ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Korea Jiwoo Kim	**Opp.:** Slovakia Adam	**Rev.:** Belarus Dmitry
5	5	5
Physics ±3 0	**Physics ±3** 0	**Physics ±3** 0
☐ Correct and relevant physics	☐ Correct and relevant physics	☐ Correct and relevant physics
☐ Scientific approach	☐ Scientific approach	☐ Scientific approach
☐ Validity of conclusions	☐ Validity of conclusions	☐ Validity of conclusions
☐ Accurate answers	☐ Accurate answers	☐ Accurate answers
Presentation ±1 0	**Presentation ±1** 0	**Presentation ±1** 0
☐ Clear and understandable	☐ Clear and understandable	☐ Clear and understandable
☐ Appropriate manner	☐ Appropriate manner	☐ Appropriate manner
☐ Overall impression	☐ Overall impression	☐ Overall impression
Reporter ±1 -1	**Opponent ±1** -1	**Reviewer ±1** +1
☐ Quality of experimental technique(s)	☐ Response to the reporter's solution	☐ Provides a thorough review of report and discussion
☐ Structure	☐ Shows the strong and weak points of the report	☐ Expresses own opinion about topics presented or discussed
☐ Explanation of formulae and symbols	☐ Finds shortcomings or errors in the report	☐ Relevance of questions to both the reporter and the opponent
☐ Appropriate models, conformity of dimensions	☐ Relevance of the questions	☐ Draws attention to points missed by the reporter or the opponent
☐ Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	
☐ References, proper citations of ideas and input of others		
☐ Novelty of the report		
☐ Contribution to the discussion		
Final Grade: Reporter 4	Final Grade: Opponent 4	Final Grade: Reviewer 6

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 7 Stage: 3 Problem no.: 11

Juror: STANISLAV PAVOS Signature: [signature]

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: KOREA — 5

Physics ±3 -1

- ☐ Correct and relevant physics
- ☒ Scientific approach
- ☒ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0

- ☒ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

– time management

Reporter ±1 -1

- ☒ Quality of experimental technique(s) ?
- ☒ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☒ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☒ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 3

Opp.: SLOVAKIA — 5

Physics ±3 +1

- ☐ Correct and relevant physics
- ☒ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0

- ☐ Clear and understandable
- ☒ Appropriate manner
- ☒ Overall impression

Opponent ±1 +1

- ☐ Response to the reporter's solution
- ☒ Shows the strong and weak points of the report
- ☒ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 7

Rev.: BELARUS — 5

Physics ±3 0

- ☒ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0

- ☒ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

☒ time?

Reviewer ±1 +1

- ☐ Provides a thorough review of report and discussion
- ☒ Expresses own opinion about topics presented or discussed
- ☒ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 6

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 7 Stage: 3 Problem no.: 11

Juror: Dina Izadi Signature: [signature]

A report should include:
• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:
• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:
• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles and appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics, presentation*** and for their ***specific role***.
- The ***reporter, opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Jiwoo Kim Korea — 5

Physics ±3 — -0.5
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☒ Accurate answers

Presentation ±1 — +1
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — 0.5
- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 6

Opp.: Adam Orbar Slovakia — 5

Physics ±3 — 2
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☒ Accurate answers

Presentation ±1 — -0.5
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☒ Overall impression

Opponent ±1 — 0.5
- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent — 7

Rev.: Dmitry Baranov Belarus — 5

Physics ±3 — -0.5
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☒ Validity of conclusions
- ☒ Accurate answers

Presentation ±1 — 0.5
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☒ Overall impression

Reviewer ±1 — 0.5
- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 6

Revised after IOC feedback and approved by EC on 2011-11-03

R

Round: 1 Room: 7 Fight Assistants:.....

	Stage 1			Stage 2			Stage 3			Stage 4		
Team	Slovakia	Belarus	Korea	Belarus	Korea	Slovakia	Korea	Slovakia	Belarus			
Juror	Rep	Opp	Rev	Rep	Opp	Rev	Rep	Opp	Rev	Rep	Opp	Rev
Felicia Ullstad (chair)	7	6	8	6	6	5	2	7	6			
Valentin Lobyshev	4	7	6	7	7	7	3	7	7			
Ye Yeo	4	6	5	5	8	8	4	4	6			
Stanislav Panos	5	7	9	6	8	8	3	7	6			
Dina Izadi	6	8	9	5	8	7	6	7	6			
Acting Team Member	Eduard Orovkin	Anton Rusanov	Jiwoo Kim	Daniil Yarmolkevich	Ahn Cheong Eung	Miroslav Gasparek	Jiwoo Kim	Adam Urban	Dmitriy Baranov			
Rejected Problems	-			-								
Accepted Problem	9. Artificial Muscle			6. Magnus Glider			11. Cat's Whisker					

Signature Fight Assistant:..... Double-checked with Scoring Guidelines by second Fight Assistant (signature): .....

Round: 1 Room: 8 Fight Assistants:

	Stage 1			Stage 3			Stage 2			Stage 4		
Team	Nigeria	Hungrary	Austria.	Austria	Nigeria	Hungrary	Hungrary	Austria	Nigeria.			
Juror	Rep	Opp	Rev	Rep	Opp	Rev	Rep	Opp	Rev	Rep	Opp	Rev
Chuan Yong Li	5	6	8	6	5	7	6	7	6			
Mattias Anderson	3	7	7	7	3	5	6	7	4			
Tatyana Gonçalves Stankevicius	5	6	6	7	5	6	5	6	5			
Kerry Parker	3	4	5	7	4	8	7	5	4			
Sandu Mirel Golcea	5	6	5	5	5	6	6	7	6			
Acting Team Member	Yusuf Shittu.	AKOS BIKO	NIESE MARKUS	Amir Dellali	Philip Elushade.	Andráj Louko'	Tina Bánoczki	FRANK R.	Rebecca Banjo			
Rejected Problems	(6) (10)			(17)								
Accepted Problem	(7)			(13)			(3)					

Signature Fight Assistant:..... Double-checked with Scoring Guidelines by second Fight Assistant (signature): Buc Wolfgang

Scoring Guidelines

Fight (Round no.): 1 Room: 8 Stage: 1 Problem no.: 7

Juror: ChuanYong Li Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: _____ 5

Physics ±3 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 0

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 5

Opp.: _____ 5

Physics ±3 +0.5

- ☑ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☑ Overall impression

Opponent ±1 +0.5

- ☐ Response to the reporter's solution
- ☑ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 6

Rev.: _____ 5

Physics ±3 +1

- ☑ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 +1

- ☑ Clear and understandable
- ☑ Appropriate manner
- ☐ Overall impression

Reviewer ±1 +0.5

- ☑ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 8

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 8 Stage: 1 Problem no.: 7

Juror: Mattias Andersson Signature: MA

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** *and* ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter, opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Nigeria — 5

Physics ±3 — -2

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable –
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — 0

- ☐ Quality of experimental technique(s) –
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions ~
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 3

Opp.: Hungary — 5

Physics ±3 — +1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 — +1

- ☐ Response to the reporter's solution +
- ☐ Shows the strong and weak points of the report +
- ☐ Finds shortcomings or errors in the report +
- ☐ Relevance of the questions *
- ☐ Contribution to the discussion

Final Grade: Opponent — 7

Rev.: Austria — 5

Physics ±3 — +1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — +1

- ☐ Provides a thorough review of report and discussion +
- ☐ Expresses own opinion about topics presented or discussed +
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 7

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 8 Stage: 1 Problem no.: 7

Juror: TATYANA G.S. Signature: TGS

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories***, ***principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: NIGERIA — 5

Physics ±3 — +0,5

+0,5 ☑ Correct and relevant physics
+0,5 ☑ Scientific approach
-0,5 ☒ Validity of conclusions
☐ Accurate answers

Presentation ±1 — 0

☐ Clear and understandable
☐ Appropriate manner
☐ Overall impression

Reporter ±1 — -0,5

-0,5 ☒ Quality of experimental technique(s)
☐ Structure
☐ Explanation of formulae and symbols
☐ Appropriate models, conformity of dimensions
☐ Slides, on-site experiments, audio, video, as appropriate
☐ References, proper citations of ideas and input of others
☐ Novelty of the report
☐ Contribution to the discussion

Final Grade: Reporter — 5

Opp.: ~~HUNGARY~~ HUNGARY — 5

Physics ±3 — +0,5

☑ Correct and relevant physics +0,25
☑ Scientific approach +0,25
☐ Validity of conclusions
☐ Accurate answers

Presentation ±1 — 0

☐ Clear and understandable
☐ Appropriate manner
☐ Overall impression

Opponent ±1 — +0,5

☑ Response to the reporter's solution +0,25
☐ Shows the strong and weak points of the report
☑ Finds shortcomings or errors in the report +0,25
☐ Relevance of the questions
☐ Contribution to the discussion

Final Grade: Opponent — 6

Rev.: AUSTRIA — 5

Physics ±3 — 0

☐ Correct and relevant physics
☐ Scientific approach
☐ Validity of conclusions
☐ Accurate answers

Presentation ±1 — 0

☐ Clear and understandable
☐ Appropriate manner
☐ Overall impression

Reviewer ±1 — +1

☑ Provides a thorough review of report and discussion +0,3
☑ Expresses own opinion about topics presented or discussed +0,3
☑ Relevance of questions to both the reporter and the opponent +0,3
☑ Draws attention to points missed by the reporter or the opponent +0,1

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 6

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 8 Stage: 1 Problem no.: 7

Juror: Kerry Parker Signature: Kerry Parker

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles and appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Yusuf Shittu, Nigeria — 5

Physics ±3 — -0.5

- [x] Correct and relevant physics
- [ ] Scientific approach
- [ ] Validity of conclusions
- [x] Accurate answers

Presentation ±1 — –

- [ ] Clear and understandable
- [ ] Appropriate manner
- [ ] Overall impression

Reporter ±1 — -0.5

- [x] Quality of experimental technique(s)
- [ ] Structure
- [ ] Explanation of formulae and symbols
- [ ] Appropriate models, conformity of dimensions
- [x] Slides, on-site experiments, audio, video, as appropriate
- [ ] References, proper citations of ideas and input of others
- [x] Novelty of the report
- [ ] Contribution to the discussion

Final Grade: Reporter **3**

Opp.: Akos Biko, Hungary — 5

Physics ±3 — –

- [ ] Correct and relevant physics
- [ ] Scientific approach
- [ ] Validity of conclusions
- [ ] Accurate answers

Presentation ±1 — -0.5

- [ ] Clear and understandable
- [ ] Appropriate manner
- [ ] Overall impression

Opponent ±1 — -0.5

- [ ] Response to the reporter's solution
- [ ] Shows the strong and weak points of the report
- [ ] Finds shortcomings or errors in the report
- [ ] Relevance of the questions
- [ ] Contribution to the discussion

Final Grade: Opponent **4**

Rev.: Niese Markus, Austria — 5

Physics ±3 — –

- [ ] Correct and relevant physics
- [ ] Scientific approach
- [ ] Validity of conclusions
- [ ] Accurate answers

Presentation ±1 — –

- [ ] Clear and understandable
- [ ] Appropriate manner
- [ ] Overall impression

Reviewer ±1 — –

- [ ] Provides a thorough review of report and discussion
- [ ] Expresses own opinion about topics presented or discussed
- [ ] Relevance of questions to both the reporter and the opponent
- [ ] Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer **5**

Scoring Guidelines

Fight (Round no.): 1 Room: 8 Stage: 1 Problem no.: 7

Juror: GOLCEA ANDU Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories, principles*** *and* ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: 5

Physics ±3 -2

- [x] Correct and relevant physics
- [x] Scientific approach
- [ ] Validity of conclusions
- [ ] Accurate answers

Presentation ±1 0

- [ ] Clear and understandable
- [ ] Appropriate manner
- [ ] Overall impression

Reporter ±1 +2

- [x] Quality of experimental technique(s)
- [ ] Structure
- [ ] Explanation of formulae and symbols
- [ ] Appropriate models, conformity of dimensions
- [ ] Slides, on-site experiments, audio, video, as appropriate
- [ ] References, proper citations of ideas and input of others
- [ ] Novelty of the report
- [x] Contribution to the discussion

Final Grade: Reporter 5

Opp.: 5

Physics ±3 +1

- [ ] Correct and relevant physics
- [ ] Scientific approach
- [ ] Validity of conclusions
- [x] Accurate answers

Presentation ±1 0

- [ ] Clear and understandable
- [ ] Appropriate manner
- [ ] Overall impression

Opponent ±1 0

- [ ] Response to the reporter's solution
- [x] Shows the strong and weak points of the report
- [ ] Finds shortcomings or errors in the report
- [ ] Relevance of the questions
- [x] Contribution to the discussion

Final Grade: Opponent 6

Rev.: 5

Physics ±3 0

- [ ] Correct and relevant physics
- [ ] Scientific approach
- [ ] Validity of conclusions
- [ ] Accurate answers

Presentation ±1 0

- [ ] Clear and understandable
- [ ] Appropriate manner
- [ ] Overall impression

Reviewer ±1 0

- [ ] Provides a thorough review of report and discussion
- [ ] Expresses own opinion about topics presented or discussed
- [ ] Relevance of questions to both the reporter and the opponent
- [ ] Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 5

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 8 Stage: 2 Problem no.: _____

Juror: Chuanyong Li Signature: Chuanyong Li

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Hungary — 5

Physics ±3 +0.5

- ☐ Correct and relevant physics
- ☑ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 +0.5

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☑ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 6

Opp.: Austria — 5

Physics ±3 +1

- ☑ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 +0.5

- ☑ Clear and understandable
- ☐ Appropriate manner
- ☑ Overall impression

Opponent ±1 +0.5

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☑ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 7

Rev.: Negira — 5

Physics ±3 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 +0.5

- ☑ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 +0.5

- ☐ Provides a thorough review of report and discussion
- ☑ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 6

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 8 Stage: 2 Problem no.: 3

Juror: Mattias Andersso Signature: M.A.

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Hungary — 5

Physics ±3 +1,5

- ☐ Correct and relevant physics
- ☐ Scientific approach Lots of experiments
- ☐ Validity of conclusions Little carrying out theory
- ☐ Accurate answers

Presentation ±1 -0,5

- ☐ Clear and understandable
- ☐ Appropriate manner Too fast
- ☐ Overall impression

Reporter ±1

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 6

Opp.: Austria — 5

Physics ±3 +2

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☑ Overall impression

Opponent ±1 0

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 7

Rev.: Nigeria — 5

Physics ±3 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 -1

- ☐ Provides a thorough review of report and discussion No
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 4

Scoring Guidelines

Fight (Round no.): 1 Room: 8 Stage: 2 Problem no.: 3

Juror: TATYANA G.G. Signature: TGS

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** **and** ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories, principles*** *and* ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: HUNGARY (TINA) — 5

Physics ±3 — -0,75

- -0,25 ☒ Correct and relevant physics
- -0,25 ☒ Scientific approach
- -0,25 ☒ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — +0,5

- +0,25 ☑ Quality of experimental technique(s)
- ☐ Structure
- -0,25 ☒ Explanation of formulae and symbols
- +0,25 ☑ Appropriate models, conformity of dimensions (ERRORS)
- +0,25 ☒ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 5,0

Opp.: AUSTRIA (FRANK, REBECA) — 5

Physics ±3 — 10,5 (+0,25)

- ☒ Correct and relevant physics
- ☒ Scientific approach (+0,25)
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☑ Overall impression

Opponent ±1 — +0,5

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☒ Finds shortcomings or errors in the report (+0,25)
- ☒ Relevance of the questions +0,25
- ☐ Contribution to the discussion

Final Grade: Opponent — 6,0

Rev.: NIGERIA (REBECCA) — 5

Physics ±3 — 0

- ☐ Correct and relevant physics
- ☑ Scientific approach -0,25
- ☑ Validity of conclusions +0,25
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — +0,25

- ☑ Provides a thorough review of report and discussion +0,25
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 5,0

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 8 Stage: 2 Problem no.: _____

Juror: Kemy Parker Signature: [signature]

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories***, ***principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Tinnea Bánóczki, Hungary — 5

Physics ±3 — 1·5

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — ±

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — +0.5

- ☐ Quality of experimental technique(s)
- ☑ Structure
- ☐ Explanation of formulae and symbols
- ☑ Appropriate models, conformity of dimensions
- ☑ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 7.

Opp.: Rebecca Frank, Austria — 5

Physics ±3 — +0.5

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — —

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 — -0.5

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent — 5

Rev.: Rebeca Banjo, Nigeria — 5

Physics ±3 — +0.5

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — —

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — +0.5

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 4

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 8 Stage: 2 Problem no.: _____

Juror: GOICEA SANDU Signature: [signature]

A report should include:
• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:
• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:
• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** *and* ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics, presentation*** and for their ***specific role***.
- The ***reporter, opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: _____ 5

Physics ±3 +2
- [x] Correct and relevant physics
- [ ] Scientific approach
- [x] Validity of conclusions
- [ ] Accurate answers

Presentation ±1 0
- [ ] Clear and understandable
- [ ] Appropriate manner
- [ ] Overall impression

Reporter ±1 -1
- [ ] Quality of experimental technique(s)
- [ ] Structure
- [x] Explanation of formulae and symbols
- [x] Appropriate models, conformity of dimensions
- [ ] Slides, on-site experiments, audio, video, as appropriate
- [x] References, proper citations of ideas and input of others
- [ ] Novelty of the report
- [ ] Contribution to the discussion

Final Grade: Reporter 6

Opp.: _____ 5

Physics ±3 +1
- [x] Correct and relevant physics
- [ ] Scientific approach
- [ ] Validity of conclusions
- [ ] Accurate answers

Presentation ±1 0,5
- [x] Clear and understandable
- [ ] Appropriate manner
- [x] Overall impression

Opponent ±1 0,5
- [ ] Response to the reporter's solution
- [ ] Shows the strong and weak points of the report
- [x] Finds shortcomings or errors in the report
- [ ] Relevance of the questions
- [x] Contribution to the discussion

Final Grade: Opponent 7

Rev.: _____ 5

Physics ±3 1
- [ ] Correct and relevant physics
- [ ] Scientific approach
- [x] Validity of conclusions
- [ ] Accurate answers

Presentation ±1 0,5
- [ ] Clear and understandable
- [x] Appropriate manner
- [ ] Overall impression

Reviewer ±1 -0,5
- [ ] Provides a thorough review of report and discussion
- [ ] Expresses own opinion about topics presented or discussed
- [x] Relevance of questions to both the reporter and the opponent
- [ ] Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 6

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 8 Stage: 3 Problem no.: 13

Juror: ChuanYong Li Signature: ChuanYong Li

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories***, ***principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: _____ 5

Physics ±3 +0.5

- ☐ Correct and relevant physics
- ☑ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 +0.5

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☑ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 6

Opp.: _____ 5

Physics ±3 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☑ Overall impression

Opponent ±1 0

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 5

Rev.: _____ 5

Physics ±3 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 +0.5

- ☑ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 +1

- ☐ Provides a thorough review of report and discussion
- ☑ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 7

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 8 Stage: ~~2~~ 3 Problem no.: 13

Juror: Mattias Andersson Signature: M.A.

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: ~~Austria~~

5

Physics ±3 +2

- ☐ Correct and relevant physics +
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 -1

- ☐ Clear and understandable –
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 +1

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions +
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 7

Opp.: ~~Nigeria~~

5

Physics ±3 -1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 -1

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions –
- ☐ Contribution to the discussion

Final Grade: Opponent 3

Rev.: ~~Nigeria~~ Hungary

5

Physics ±3 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 0

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed +
- ☐ Relevance of questions to both the reporter and the opponent –
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 5

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): #1 Room: 8 Stage: ~~2~~ 3 Problem no.: 13

Juror: TATYANA G. S. Signature: TGS

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories***, ***principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: AUSTRIA (AMIR PELLALI) — 5

Physics ±3 +0,5

+0,25 ☑ Correct and relevant physics
+0,25 ☑ Scientific approach
☐ Validity of conclusions
☐ Accurate answers

Presentation ±1 +0,5

☑ Clear and understandable
☐ Appropriate manner
☐ Overall impression

Reporter ±1 +0,75

+0,25 ☑ Quality of experimental technique(s)
☐ Structure
-0,25 ☑ Explanation of formulae and symbols → MOVEMENT EQUATIONS
-0,25 ☐ Appropriate models, conformity of dimensions
+0,25 ☑ Slides, on-site experiments, audio, video, as appropriate
+0,25 ☑ References, proper citations of ideas and input of others + SIMULATIONS
+0,25 ☑ Novelty of the report
+0,25 ☑ Contribution to the discussion

Final Grade: Reporter 7,0

Opp.: NIGERIA (PHILIP) — 5

Physics ±3 +0,25

☐ Correct and relevant physics
☑ Scientific approach +0,25
☐ Validity of conclusions
☐ Accurate answers

Presentation ±1 0

☐ Clear and understandable
☐ Appropriate manner
☐ Overall impression

Opponent ±1 -0,25

☐ Response to the reporter's solution
☒ Shows the strong and weak points of the report - 0,25
☒ Finds shortcomings or errors in the report
☐ Relevance of the questions
☒ Contribution to the discussion

Final Grade: Opponent 5,0

Rev.: HUNGARY (ANDRÁS LAJKÓ) — 5

Physics ±3 +0,5

☑ Correct and relevant physics +0,25
☑ Scientific approach + 0,25
☐ Validity of conclusions
☐ Accurate answers

Presentation ±1 0

☐ Clear and understandable
☐ Appropriate manner
☐ Overall impression

Reviewer ±1 +0,5

☑ Provides a thorough review of report and discussion +0,25
☑ Expresses own opinion about topics presented or discussed +0,25
☐ Relevance of questions to both the reporter and the opponent
☐ Draws attention to points missed by the reporter or the opponent

Final Grade: Reviewer 6,0

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 8 Stage: ~~4~~ 3 Problem no.: 13

Juror: Kerry Parker Signature: Ker Par.

A report should include:
• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:
• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:
• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** **and** ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** *and* ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics, presentation*** and for their ***specific role***.
- The ***reporter, opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Amir Dellali, Austria. — 5

Physics ±3 — 2 ~~1.5~~
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — -0.5
- ☐ Clear and understandable
- ☐ Appropriate manner — key graph illegible.
- ☐ Overall impression

Reporter ±1 — +0.5
- ☐ Quality of experimental technique(s) ? lack of parameters.
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 7

Opp.: Philip Elushade, Nigeria — 5

Physics ±3 — -1
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — —
- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 — —
- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent — 4

Rev.: András Lankó, Hungary — 5

Physics ±3 — 2
- ☑ Correct and relevant physics
- ☑ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — +0.5
- ☑ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — +0.5
- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 8

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 8 Stage: 2 Problem no.: 13

Juror: GOLCEA IOANA Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories, principles*** *and* ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: _____ 5

Physics ±3 -1

- ☐ Correct and relevant physics
- ☒ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 +1

- ☒ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 5

Opp.: _____ 5

Physics ±3 +1

- ☒ Correct and relevant physics
- ☐ Scientific approach
- ☒ Validity of conclusions
- ☐ Accurate answers

Presentation ±1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 -1

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 5

Rev.: _____ 5

Physics ±3 +1

- ☒ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 0

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 6

Revised after IOC feedbed and approved by EC on 2011-11-03

Challenge Problem 16 Wet and Dark Accepted.

Scoring Guidelines

Fight (Round no.): 1 Room: 9 Stage: 1 Problem no.: 16

Juror: G. Jennings Signature: G. C. Jennings

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories***, ***principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Russia — 5

Physics ±3 — ±
- ☑ Correct and relevant physics
- ☑ Scientific approach
- ☑ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0+
- ☑ Clear and understandable
- ☑ Appropriate manner
- ☑ Overall impression

Reporter ±1 — -½
- ☑ Quality of experimental technique(s)
- ☑ Structure
- ☑ Explanation of formulae and symbols
- ☑ Appropriate models, conformity of dimensions
- ☑ Slides, on-site experiments, audio, video, as appropriate
- ☑ References, proper citations of ideas and input of others
- ☑ Novelty of the report
- ☑ Contribution to the discussion

Final Grade: Reporter — 5

Opp.: Germany — 5

Physics ±3 — 1
- ☑ Correct and relevant physics
- ☑ Scientific approach
- ☑ Validity of conclusions
- ☑ Accurate answers

Presentation ±1 — 0
- ☑ Clear and understandable
- ☑ Appropriate manner
- ☑ Overall impression

Opponent ±1 — 0
- ☑ Response to the reporter's solution
- ☑ Shows the strong and weak points of the report
- ☑ Finds shortcomings or errors in the report
- ☑ Relevance of the questions
- ☑ Contribution to the discussion

Final Grade: Opponent — 6

Rev.: Thailand — 5

Physics ±3 — ½
- ☑ Correct and relevant physics
- ☑ Scientific approach
- ☑ Validity of conclusions
- ☑ Accurate answers

Presentation ±1 — 0
- ☑ Clear and understandable
- ☑ Appropriate manner
- ☑ Overall impression

Reviewer ±1 — -½
- ☑ Provides a thorough review of report and discussion
- ☑ Expresses own opinion about topics presented or discussed
- ☑ Relevance of questions to both the reporter and the opponent
- ☑ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 5

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 9 Stage: 1 Problem no.: 16

Juror: PANDŠOVÁ DAGMAR Signature: Pall.

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories***, ***principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Russia — 5

Physics ±3 — −1
- ☑ Correct and relevant physics
- ☑ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0
- ☐ Clear and understandable
- ☑ Appropriate manner
- ☐ Overall impression

Reporter ±1 — +0,5
- ☑ Quality of experimental technique(s)
- ☑ Structure
- ☑ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☑ Slides, on-site experiments, audio, video, as appropriate
- ☑ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☑ Contribution to the discussion

Final Grade: Reporter — 4

Opp.: Germany — 5

Physics ±3 — +1
- ☑ Correct and relevant physics
- ☑ Scientific approach
- ☑ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0
- ☑ Clear and understandable
- ☑ Appropriate manner
- ☐ Overall impression

Opponent ±1 — +1
- ☐ Response to the reporter's solution
- ☑ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☑ Relevance of the questions
- ☑ Contribution to the discussion

Final Grade: Opponent — 7

Rev.: Thailand — 5

Physics ±3 —
- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 —
- ☑ Clear and understandable
- ☑ Appropriate manner
- ☐ Overall impression

Reviewer ±1 —
- ☐ Provides a thorough review of report and discussion
- ☑ Expresses own opinion about topics presented or discussed
- ☑ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 5

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1. Room: 9. Stage: 1. Problem no.: 16

Juror: Yung-Yuan Hsu. Signature: Yung-Yuan Hsu.

A report should include:
• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:
• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:
• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics, presentation*** and for their ***specific role***.
- The ***reporter, opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: ~~Thailand~~ ~~Russian~~ / Pavel lanko. 5

Physics ±3 -1.5

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0.

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 -1/3

- ☐ Quality of experimental technique(s) ① base on path absorption, but can't explain diff. clothes result!
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate ② logic problem → diffsive scattering, but not concerning the "structure" & content of water.
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter ~~[illegible]~~ [illegible]

Opp.: German / ~~Cairner~~ Kanitz. 5

Physics ±3 +1.5

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 +1/3

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 +1/2

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 7.

Rev.: ~~Russian~~ / Thailand. Panithan. Jeerrasuwannakul. 5

Physics ±3 +0.5

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0.

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 +0.5

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 6.

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 9 Stage: 1 Problem no.: 16

Juror: Kim Fciimann Signature: [signature]

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** *and* ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Russia — 5

Physics ±3 -0,3

- ☐ Correct and relevant physics
- ☒ Scientific approach
- ☐ Validity of conclusions
- ☒ Accurate answers

Presentation ±1 0

- ☒ Clear and understandable
- ☒ Appropriate manner
- ☐ Overall impression

Reporter ±1 -0,5

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☒ Contribution to the discussion

Final Grade: Reporter 4

Opp.: Germany — 5

Physics ±3 0,8

- ☒ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☒ Accurate answers

Presentation ±1 0

- ☒ Clear and understandable
- ☐ Appropriate manner
- ☒ Overall impression

Opponent ±1 0,2

- ☒ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☒ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent 6

Rev.: Thailand — 5

Physics ±3 -0,4

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 0,2

- ☒ Provides a thorough review of report and discussion
- ☒ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 5

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): I Room: 9 Stage: 1 Problem no.: 16

Juror: Timoshchenko Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories***, ***principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Russia	5	**Opp.:** Germany	5	**Rev.:** Thailand	5
Physics ±3	0	**Physics ±3**	+1	**Physics ±3**	0
☐ Correct and relevant physics		☐ Correct and relevant physics		☐ Correct and relevant physics	
☐ Scientific approach		☐ Scientific approach		☐ Scientific approach	
☐ Validity of conclusions		☐ Validity of conclusions		☐ Validity of conclusions	
☐ Accurate answers		☐ Accurate answers		☐ Accurate answers	
Presentation ±1	+0.5	**Presentation ±1**	+0.5	**Presentation ±1**	+0.2
☐ Clear and understandable		☐ Clear and understandable		☐ Clear and understandable	
☐ Appropriate manner		☐ Appropriate manner		☐ Appropriate manner	
☐ Overall impression		☐ Overall impression		☐ Overall impression	
Reporter ±1	+0.5	**Opponent ±1**	+0.5	**Reviewer ±1**	-0.5
☐ Quality of experimental technique(s)		☐ Response to the reporter's solution		☐ Provides a thorough review of report and discussion	
☐ Structure		☐ Shows the strong and weak points of the report		☐ Expresses own opinion about topics presented or discussed	
☐ Explanation of formulae and symbols		☐ Finds shortcomings or errors in the report		☐ Relevance of questions to both the reporter and the opponent	
☐ Appropriate models, conformity of dimensions		☐ Relevance of the questions		☐ Draws attention to points missed by the reporter or the opponent	
☐ Slides, on-site experiments, audio, video, as appropriate		☐ Contribution to the discussion			
☐ References, proper citations of ideas and input of others					
☐ Novelty of the report					
☐ Contribution to the discussion					
Final Grade: Reporter	6	Final Grade: Opponent	7	Final Grade: Reviewer	5

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Revised after IOC feedback and approved by EC on 2011-11-03

Challenge problem 9 Hovercraft Rejected
7 Shaded Pole Rejected
3 Artificial muscle

Scoring Guidelines

Fight (Round no.): 1 Room: 9 Stage: 2 Problem no.: 3

Juror: G. Jennings Signature: G. Jennings

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Germany — Jonas Landgraf — 5

Physics ±3 — 1

- [x] Correct and relevant physics
- [x] Scientific approach
- [x] Validity of conclusions
- [x] Accurate answers

Presentation ±1 — 0

- [x] Clear and understandable
- [+] Appropriate manner
- [x] Overall impression

Reporter ±1 — 0

- [½] Quality of experimental technique(s)
- [x] Structure
- [+] Explanation of formulae and symbols
- [x] Appropriate models, conformity of dimensions
- [x] Slides, on-site experiments, audio, video, as appropriate
- [x] References, proper citations of ideas and input of others
- [x] Novelty of the report
- [ ] Contribution to the discussion

Final Grade: Reporter — 6

Opp.: Thailand — Pian Pawakapan — 5

Physics ±3 — 0+

- [ ] Correct and relevant physics
- [ ] Scientific approach
- [ ] Validity of conclusions
- [ ] Accurate answers

Presentation ±1 — 0⁻

- [ ] Clear and understandable
- [ ] Appropriate manner
- [ ] Overall impression

Opponent ±1 — 0⁻

- [ ] Response to the reporter's solution
- [ ] Shows the strong and weak points of the report
- [ ] Finds shortcomings or errors in the report
- [ ] Relevance of the questions
- [ ] Contribution to the discussion

Final Grade: Opponent — 5

Rev.: Russia — Vitalii Maitunin. — 5

Physics ±3 — 2

- [ ] Correct and relevant physics
- [ ] Scientific approach
- [ ] Validity of conclusions
- [ ] Accurate answers

Presentation ±1 — +½

- [ ] Clear and understandable
- [ ] Appropriate manner
- [ ] Overall impression

Reviewer ±1 — +½

- [ ] Provides a thorough review of report and discussion
- [ ] Expresses own opinion about topics presented or discussed
- [ ] Relevance of questions to both the reporter and the opponent
- [ ] Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 8

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1. Room: 9. Stage: II. Problem no.: 3

Juror: PANOŠOVÁ DAGMAR Signature: Pan.

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles and appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter, opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Germany — 5

Physics ±3 — 0

- [±] Correct and relevant physics
- [ ] Scientific approach
- [ ] Validity of conclusions
- [ ] Accurate answers

Presentation ±1 — 0

- [±] Clear and understandable
- [✓] Appropriate manner
- [ ] Overall impression

Reporter ±1 — 0

- [±] Quality of experimental technique(s)
- [±] Structure
- [✓] Explanation of formulae and symbols
- [ ] Appropriate models, conformity of dimensions
- [±] Slides, on-site experiments, audio, video, as appropriate
- [✓] References, proper citations of ideas and input of others
- [ ] Novelty of the report
- [−] Contribution to the discussion

Final Grade: Reporter — 5

Opp.: Thailand — 5

Physics ±3 — 0

- [ ] Correct and relevant physics
- [ ] Scientific approach
- [ ] Validity of conclusions
- [ ] Accurate answers

Presentation ±1 — 0

- [ ] Clear and understandable
- [ ] Appropriate manner
- [ ] Overall impression

Opponent ±1 — 0

- [ ] Response to the reporter's solution
- [±] Shows the strong and weak points of the report
- [−] Finds shortcomings or errors in the report
- [±] Relevance of the questions
- [ ] Contribution to the discussion

Final Grade: Opponent — 5

Rev.: Russia — 5

Physics ±3 — +0,5

- [✓] Correct and relevant physics
- [ ] Scientific approach
- [ ] Validity of conclusions
- [ ] Accurate answers

Presentation ±1 — 0

- [ ] Clear and understandable
- [ ] Appropriate manner
- [ ] Overall impression

Reviewer ±1 — +0,5

- [✓] Provides a thorough review of report and discussion
- [✓] Expresses own opinion about topics presented or discussed
- [−] Relevance of questions to both the reporter and the opponent
- [±] Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 6

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 9 Stage: 2 Problem no.: ~~3.~~ 3.

Juror: Yung-Yuan Hsu Signature: Yung-Yuan Hsu

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Jonas Landgraf, Germany	5	**Opp.:** Pian Pawakapan, Thailand.	5	**Rev.:** Vitalii Matiunin, Russia.	5
Physics ±3	0	**Physics ±3**	~~-1~~ 0.	**Physics ±3**	+1
☐ Correct and relevant physics		☐ Correct and relevant physics		☐ Correct and relevant physics	
☐ Scientific approach		☐ Scientific approach		☐ Scientific approach	
☐ Validity of conclusions		☐ Validity of conclusions		☐ Validity of conclusions	
☐ Accurate answers		☐ Accurate answers		☐ Accurate answers	
Presentation ±1	½	**Presentation ±1**	0	**Presentation ±1**	0.
☐ Clear and understandable		☐ Clear and understandable		☐ Clear and understandable	
☐ Appropriate manner		☐ Appropriate manner		☐ Appropriate manner	
☐ Overall impression		☐ Overall impression		☐ Overall impression	
Reporter ±1	½	**Opponent ±1**	-½.	**Reviewer ±1**	+½.
☐ Quality of experimental technique(s)		☐ Response to the reporter's solution		☐ Provides a thorough review of report and discussion	
☐ Structure		☐ Shows the strong and weak points of the report		☐ Expresses own opinion about topics presented or discussed	
☐ Explanation of formulae and symbols		☐ Finds shortcomings or errors in the report		☐ Relevance of questions to both the reporter and the opponent	
☐ Appropriate models, conformity of dimensions		☐ Relevance of the questions		☑ Draws attention to points missed by the reporter or the opponent	Yes
☐ Slides, on-site experiments, audio, video, as appropriate		☒ Contribution to the discussion	No		
☐ References, proper citations of ideas and input of others					
☐ Novelty of the report					
☐ Contribution to the discussion					
Final Grade: Reporter	6.	Final Grade: Opponent	~~4~~ 5.	Final Grade: Reviewer	7

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 9 Stage: 2 Problem no.: 3

Juror: Kim Freimann Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories***, ***principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Germany — 5

Physics ±3 — −2,5

- [x] Correct and relevant physics
- [ ] Scientific approach
- [ ] Validity of conclusions
- [x] Accurate answers

Presentation ±1 — 0

- [ ] Clear and understandable
- [ ] Appropriate manner
- [ ] Overall impression

Reporter ±1 — −0,5

- [x] Quality of experimental technique(s)
- [ ] Structure
- [x] Explanation of formulae and symbols
- [x] Appropriate models, conformity of dimensions
- [x] Slides, on-site experiments, audio, video, as appropriate
- [ ] References, proper citations of ideas and input of others
- [ ] Novelty of the report
- [ ] Contribution to the discussion

Final Grade: Reporter — 3

Opp.: Thailand — 5

Physics ±3 — +1,0

- [x] Correct and relevant physics
- [ ] Scientific approach
- [ ] Validity of conclusions
- [ ] Accurate answers

Presentation ±1 — 0

- [ ] Clear and understandable
- [ ] Appropriate manner
- [ ] Overall impression

Opponent ±1 — 0

- [x] Response to the reporter's solution
- [ ] Shows the strong and weak points of the report
- [ ] Finds shortcomings or errors in the report
- [ ] Relevance of the questions
- [ ] Contribution to the discussion

Final Grade: Opponent — 6

Rev.: Russia — 5

Physics ±3 — −0,5

- [x] Correct and relevant physics
- [ ] Scientific approach
- [ ] Validity of conclusions
- [ ] Accurate answers

Presentation ±1 — 0

- [ ] Clear and understandable
- [ ] Appropriate manner
- [ ] Overall impression

Reviewer ±1 — −0,5

- [x] Provides a thorough review of report and discussion
- [x] Expresses own opinion about topics presented or discussed
- [ ] Relevance of questions to both the reporter and the opponent
- [ ] Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 5

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): I Room: 9 Stage: 2 Problem no.: 3

Juror: Timoshchenko Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles and appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Germany — 5

Physics ±3 — 0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — +0.6

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 6

Opp.: Thailand — 5

Physics ±3 — -1.5

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent ±1 — 0

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent — 4

Rev.: Russia — 5

Physics ±3 — +2.0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — +0.5

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — +0.5

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 8

Revised after IOC feedback and approved by EC on 2011-11-03

Challenge problem 15 Moving brush rejected
6 Magnus glider accepted.

Scoring Guidelines

Fight (Round no.): 1 Room: 9 Stage: 3 Problem no.: 6

Juror: G. Jennings Signature: G. Jennings

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** *and* ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Thailand — Panithan Jeerasuwannakul — 5

Physics ±3 -1½

- ☒ Correct and relevant physics
- ☒ Scientific approach
- ☒ Validity of conclusions
- ☒ Accurate answers

Presentation ±1 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 -½

- ☐ Quality of experimental technique(s) -½
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☒ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter 3

Opp.: Russia — Vitalli Matiunin — 5

Physics ±3 +1

- ☑ Correct and relevant physics
- ☑ Scientific approach
- ☑ Validity of conclusions
- ☑ Accurate answers

Presentation ±1 +½

- ☑ Clear and understandable
- ☑ Appropriate manner
- ☐ Overall impression

Opponent ±1 +½

- ☑ Response to the reporter's solution
- ☑ Shows the strong and weak points of the report
- ☑ Finds shortcomings or errors in the report
- ☑ Relevance of the questions
- ☑ Contribution to the discussion

Final Grade: Opponent 7

Rev.: Germany — Sina Hartung — 5

Physics ±3 2

- ☑ Correct and relevant physics
- ☑ Scientific approach
- ☑ Validity of conclusions
- ☑ Accurate answers

Presentation ±1 0

- ☑ Clear and understandable
- ☑ Appropriate manner
- ☑ Overall impression

Reviewer ±1 0

- ☑ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer 7

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1. Room: 9. Stage: III. Problem no.: 6

Juror: PANOŠOVÁ DAGMAR Signature: Pan.

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts, theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** **and** ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles*** *and* ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Thailand — 5

Physics ±3 — -2

- [-] Correct and relevant physics
- [-] Scientific approach
- [ ] Validity of conclusions
- [-] Accurate answers

Presentation ±1 — 0

- [ ] Clear and understandable
- [x] Appropriate manner
- [ ] Overall impression

Reporter ±1 — -1

- [-] Quality of experimental technique(s)
- [x] Structure
- [-] Explanation of formulae and symbols
- [ ] Appropriate models, conformity of dimensions
- [ ] Slides, on-site experiments, audio, video, as appropriate
- [x] References, proper citations of ideas and input of others
- [ ] Novelty of the report
- [-] Contribution to the discussion

Final Grade: Reporter — 2

Opp.: Russia — 5

Physics ±3 — +2

- [+] Correct and relevant physics
- [x] Scientific approach
- [+] Validity of conclusions
- [+] Accurate answers

Presentation ±1 — +1/4

- [ ] Clear and understandable
- [ ] Appropriate manner
- [x] Overall impression

Opponent ±1 — +3/4

- [x] Response to the reporter's solution
- [+] Shows the strong and weak points of the report
- [x] Finds shortcomings or errors in the report
- [+] Relevance of the questions
- [+] Contribution to the discussion

Final Grade: Opponent — 8

Rev.: Germany — 5

Physics ±3 — +1

- [ ] Correct and relevant physics
- [ ] Scientific approach
- [x] Validity of conclusions
- [ ] Accurate answers

Presentation ±1 — +0,5

- [x] Clear and understandable
- [ ] Appropriate manner
- [ ] Overall impression

Reviewer ±1 — +1

- [ ] Provides a thorough review of report and discussion
- [x] Expresses own opinion about topics presented or discussed
- [+] Relevance of questions to both the reporter and the opponent
- [+] Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 7

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 9 Stage: 3 Problem no.: 6.

Juror: Yung-Yuan Hsu. Signature: Yung-Yuan Hsu

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories, principles*** *and* ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Panithan. Thailand	5	**Opp.:** Vitalii Matiunin. Russia.	5	**Rev.:** Sina Hartung. Germany.	5
Physics ±3	-2	**Physics ±3**	-1,5	**Physics ±3**	-1,5
☒ Correct and relevant physics		☐ Correct and relevant physics		☐ Correct and relevant physics	
☒ Scientific approach		☐ Scientific approach		☐ Scientific approach	
☒ Validity of conclusions		☐ Validity of conclusions		☐ Validity of conclusions	
☐ Accurate answers		☐ Accurate answers		☐ Accurate answers	
Presentation ±1	-1/3	**Presentation ±1**	-0,5	**Presentation ±1**	-0,5
☐ Clear and understandable		☐ Clear and understandable		☐ Clear and understandable	
☐ Appropriate manner		☐ Appropriate manner		☐ Appropriate manner	
☐ Overall impression		☒ Overall impression		☐ Overall impression	
Reporter ±1	-2/3	**Opponent ±1**	-2/3	**Reviewer ±1**	-2/3
☑ Quality of experimental technique(s)		☐ Response to the reporter's solution		☐ Provides a thorough review of report and discussion	
☐ Structure		☐ Shows the strong and weak points of the report		☐ Expresses own opinion about topics presented or discussed	
☐ Explanation of formulae and symbols		☒ Finds shortcomings or errors in the report		☐ Relevance of questions to both the reporter and the opponent	
☒ Appropriate models, conformity of dimensions		☐ Relevance of the questions		☐ Draws attention to points missed by the reporter or the opponent	
☐ Slides, on-site experiments, audio, video, as appropriate		☐ Contribution to the discussion			
☐ References, proper citations of ideas and input of others					
☐ Novelty of the report					
☐ Contribution to the discussion					
Final Grade: Reporter	2.	Final Grade: Opponent	8	Final Grade: Reviewer	8.

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Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 9 Stage: 3 Problem no.: 6

Juror: Kim Freimann Signature: [signature]

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative, non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts, theories, principles and appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Thailand — 5

Physics ±3 — -2,5

- ☑ Correct and relevant physics
- ☐ Scientific approach
- ☑ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — -0,5

- ☑ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — -0,5

- ☑ Quality of experimental technique(s)
- ☑ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 2

Opp.: Russia — 5

Physics ±3 — +1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☑ Overall impression

Opponent ±1 — -1

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent — 5

Rev.: Germany — 5

Physics ±3 — +2

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — +0,5

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer ±1 — +0,5

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 8

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 1 Room: 9 Stage: 3 Problem no.: 6

Juror: Timoshchenko Signature:

A report should include:

• a ***presentation*** of the appropriate ***concepts, theories and principles*** of the problem • an ***explanation*** of the ***observed phenomena*** • an ***application*** of ***appropriate mathematics*** • reasonable **experimental technique** to ***gather*** and ***record data*** (or ***demonstrate*** the ***phenomena*** if appropriate) • linking of ***theoretical*** and ***experimental findings*** to draw ***suitable conclusions*** • an attempt to communicate ***difficult*** or ***complex*** ideas in an ***effective*** and ***understandable*** manner

An opposition should show that:

• the opponent ***challenged*** the ***reporter's understanding*** of the presented ***concepts***, ***theories*** and ***principles*** • the opponent understood the ***appropriate mathematics*** presented • the opponent ***critiqued*** the ***experimental technique*** used and questioned the ***validity*** of the ***data*** • the opponent appreciated and highlighted the ***strengths and weaknesses*** of the report

A review should show that:

• the reviewer succeeded in giving an ***objective summary*** of the performances the ***reporter*** and ***opponent*** • the reviewer appreciated the ***important aspects*** (especially the ***controversial*** ones) • the reviewer's ***personal opinion*** was in evidence (***not*** just ***superficial observations***) • such personal opinions were ***informative***, ***non-trivial*** and demonstrated, where possible, the reviewer's ***understanding*** of ***concepts***, ***theories***, ***principles*** and ***appropriate mathematics*** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for ***physics***, ***presentation*** and for their ***specific role***.
- The ***reporter***, ***opponent*** and ***reviewer*** each ***start with 5 points***.
- Consider the following ***suggestions*** to ***add*** to or ***deduct*** from the initial ***5 points***.
- Select each partial grade from each section and ***write it*** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Thailand — 5

Physics ±3 — -1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter ±1 — -1

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter — 3

Opp.: Russia — 5

Physics ±3 — +1,5

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☑ Accurate answers

Presentation ±1 — 0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☑ Overall impression

Opponent ±1 — +0,5

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent — 7

Rev.: Germany — 5

Physics ±3 — +1,5

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☑ Validity of conclusions
- ☑ Accurate answers

Presentation ±1 — +0,5

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☑ Overall impression

Reviewer ±1 — +1

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer — 8

Revised after IOC feedback and approved by EC on 2011-11-03

Round: 1 Room: 9 Fight Assistants:.....

	Stage 1			Stage 2			Stage 3			Stage 4		
Team	Russia	Germany	Thailand	Germany	Thailand	Russia	Thailand	Russia	Germany			
Juror	Rep	Opp	Rev	Rep	Opp	Rev	Rep	Opp	Rev	Rep	Opp	Rev
Gavin Jennings (chair)	5	6	5	6	5	8	3	7	7			
Dagmar Panosova	4	7	5	5	5	6	2	8	7			
Yung-Yaan Hsu	3	7	6	6	5	7	2	8	8			
Kim Freimann	4	6	5	3	6	5	2	5	8			
Igor Timoshchenko	6	7	5	6	4	8	2 3	7	8			
Acting Team Member	Pavel Janko	Carina Kanitz	Panithan Jeerasuwannakul	Jonas Landgraf	Pian Paukapan	Vitalii Matiunin	Panithan Jeerasuwannakul	Vitalii Matiunin	Sina Hontung			
Rejected Problems	1			9, 7			15					
Accepted Problem	16			3			6					

Signature Fight Assistant:..... Double-checked with Scoring Guidelines by second Fight Assistant (signature): .....