

Scoring Guidelines

Fight (Round no.): 5 Room: K Stage: 1 Problem no.: 1

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.: Kerry 5

Physics ± 3 -2

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

Presentation ± 1 +1/2

- Clear and understandable
- Appropriate manner
- Overall impression

Reporter ± 1 +1/2

- 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.: Ceech 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

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.: Switzerland 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 1/2

- 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

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**

Scoring Guidelines

Fight (Round no.): 5 Room: k Stage: 1 Problem no.: 1

Juror: Marin Leonhard 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.: Kaya 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

2

Opp.: Czech Republic 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

3

Rev.: Switzerland 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

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**

Scoring Guidelines

Fight (Round no.): 5 Room: K Stage: 1 Problem no.: 1

Juror: KIRSTEN STADERMANN 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.: Kenia 5

Physics ±3

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

-2

Presentation ±1

- Clear and understandable
- Appropriate manner
- Overall impression

0

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

-0.5

Final Grade: Reporter

2.2

Opp.: Czech Rep. 5

Physics ±3

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

0.1

Presentation ±1

- Clear and understandable
- Appropriate manner
- Overall impression

0

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

0

Final Grade: Opponent

4

Rev.: Zwibelbund 5

Physics ±3

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

+1

Presentation ±1

- Clear and understandable
- Appropriate manner
- Overall impression

0

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

+1

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**

Scoring Guidelines

Fight (Round no.): 5 Room: K Stage: 1 Problem no.: 1
 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.: Paul Gatumba 5
Kenya

Physics ±3

- Correct and relevant physics
 - Scientific approach
 - Validity of conclusions
 - Accurate answers
- +1/2
-1/2
= 0

Presentation ±1

- Clear and understandable
 - Appropriate manner
 - Overall impression
- +0

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
- +0

Final Grade: Reporter

5

Opp.: Ank Vokc Quy 5
Czech

Physics ±3

- Correct and relevant physics
 - Scientific approach
 - Validity of conclusions
 - Accurate answers
- 1/2

Presentation ±1

- Clear and understandable
 - Appropriate manner
 - Overall impression
- 1/2

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
- 1/2

Final Grade: Opponent

4

Rev.: Patrick Legger 5
Switzerland

Physics ±3

- Correct and relevant physics
 - Scientific approach
 - Validity of conclusions
 - Accurate answers
- 1/2

Presentation ±1

- Clear and understandable
 - Appropriate manner
 - Overall impression
- 0

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
- 1

Final Grade: Reviewer

2

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

Scoring Guidelines

Fight (Round no.): 5 Room: K Stage: 1 Problem no.: 10718
 Juror: DEINLEIN Signature: Dei

- 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.: Keny a 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) *poor*
- Structure *ok*
- Explanation of formulae and symbols *very simple*
- 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 *no*
- Contribution to the discussion

Final Grade: Reporter 2

Opp.: Czech 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.: Swiss 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

Scoring Guidelines

Fight (Round no.): 5 Room: K Stage: 1 Problem no.: 1

Juror: Chan Oung Park Signature: Chan Oung Park

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 *theoretical +0.5*
- Scientific approach *experimental +0.5*
- Validity of conclusions *accuracy & error -0.5*
- 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.: Czech Rep 5

Physics ±3

- Correct and relevant physics *+0.5*
- Scientific approach *+0.3*
- Validity of conclusions *+0.2*
- Accurate answers

Presentation ±1

- Clear and understandable
- Appropriate manner
- Overall impression

Opponent ±1

- Response to the reporter's solution *-0.5*
- 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

Final Grade: Opponent

5

Rev.: Switzerland 5

Physics ±3

- Correct and relevant physics *+1.0*
- Scientific approach *+0.5*
- Validity of conclusions
- Accurate answers

Presentation ±1

- Clear and understandable *+0.5*
- 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

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**

Scoring Guidelines

Fight (Round no.): 5 Room: K Stage: 2 Problem no.: 9

Juror: J. BARCUMBE signature: John Barcumbe

- 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.: Card 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 1/2

- 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.: Switzerland. 5

Physics ±3 -1

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

Presentation ±1 1/2

- 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 5

Rev.: 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

Reviewer ±1 1/2

- 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

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**

Scoring Guidelines

Fight (Round no.): 5 Room: K Stage: 2 Problem no.: 9

Juror: Martin Leonard 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.: Czech Rep. 5

Physics ±3

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

-1.5

Presentation ±1

- Clear and understandable
- Appropriate manner
- Overall impression

0

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

0

Final Grade: Reporter 4 ~~5~~

Opp.: Switzerland 5

Physics ±3

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

-1

Presentation ±1

- Clear and understandable
- Appropriate manner
- Overall impression

0

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

+1

Final Grade: Opponent 7 ~~5~~

Rev.: Kenya 5

Physics ±3

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

0

Presentation ±1

- Clear and understandable
- Appropriate manner
- Overall impression

0

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

-0.5

Final Grade: Reviewer 4.5 ~~5~~

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

Scoring Guidelines

Fight (Round no.): 5 Room: k Stage: 2 Problem no.: 9

Juror: KIRSTEN STADERMAN Signature: Kat Stal

<p>A report should include:</p> <ul style="list-style-type: none"> • 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
<p>An opposition should show that:</p> <ul style="list-style-type: none"> • 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
<p>A review should show that:</p> <ul style="list-style-type: none"> • 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.: Gech rep 5

Opp.: Switzerland 5

Rev.: Kenya 5

Physics ±3

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

-0.5

Physics ±3

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

+1

Physics ±3

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

0

Presentation ±1

- Clear and understandable
- Appropriate manner
- Overall impression

0

Presentation ±1

- Clear and understandable
- Appropriate manner
- Overall impression

0

Presentation ±1

- Clear and understandable
- Appropriate manner
- Overall impression

0

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

0

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

-1

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

+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: Reporter

5

Final Grade: Opponent

5

Final Grade: Reviewer

6

Scoring Guidelines

Fight (Round no.): 5 Room: k Stage: 2 Problem no.: 2

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.: Tomaz Zahradnik
Czech. 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

3

Opp.: Patrick Meister
Switzerland. 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.: Paul Gatumba
Kenya. 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

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**

Scoring Guidelines

Fight (Round no.): 5 Room: K Stage: 2 Problem no.: 9

Juror: DEINLEIN Signature: Dai

DEINLEIN

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 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.: Swiss 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.: Kenya 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

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**

Scoring Guidelines

Fight (Round no.): 5 Room: K Stage: 2 Problem no.: 9

Juror: Chan Ony Park Signature: Chan Ony Park

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 Rep 5

Physics ±3

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

theory -0.5
experiment 1.0

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

3

Opp.: Switzerland 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.: Kenya 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

Scoring Guidelines

Fight (Round no.): 5 Room: K Stage: 3 Problem no.: 16

Juror: J. Balcomb Signature: AR Bu

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.: Switzerland 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
- References, proper citations of ideas and input of others
- Novelty of the report
- Contribution to the discussion

Final Grade: Reporter 7

Opp.: 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

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 Rep 5

Physics ± 3 -1

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

Presentation ± 1 +1/2

- Clear and understandable
- Appropriate manner
- Overall impression

Reviewer ± 1 +1/2

- 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

Scoring Guidelines

Fight (Round no.): 5 Room: 4 Stage: 3 Problem no.: 16

Juror: Markin Leonhard 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.: Switzerland 5

Opp.: Kenya 5

Rev.: Georg Republic 5

Physics ±3

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

+1

Physics ±3

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

0

Physics ±3

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

0

Presentation ±1

- Clear and understandable
- Appropriate manner
- Overall impression

+5

Presentation ±1

- Clear and understandable
- Appropriate manner
- Overall impression

0

Presentation ±1

- Clear and understandable
- Appropriate manner
- Overall impression

0

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

+5

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

+1

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

+1

Final Grade: Reporter

7

Final Grade: Opponent

6

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**

Scoring Guidelines

Fight (Round no.): B5 Room: K Stage: 3 Problem no.: 16

Juror: KIRSTEN STADERMANN Signature: Kirsten Stad

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.: Switzerland 5

Opp.: Kenya 5

Rev.: Czech Rep. 5

Physics ±3 +1

Physics ±3 -1

Physics ±3 +1

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

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

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

Presentation ±1 +0,5

Presentation ±1 0

Presentation ±1 0

- Clear and understandable
- Appropriate manner
- Overall impression

- Clear and understandable
- Appropriate manner
- Overall impression

- Clear and understandable
- Appropriate manner
- Overall impression

Reporter ±1 +0,5

Opponent ±1 -1

Reviewer ±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

- 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

- 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

Final Grade: Reporter 7

Final Grade: Opponent 3

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**

Scoring Guidelines

Fight (Round no.): 5 Room: K Stage: 3 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.: Patrick Leggerhager
Swiss 5

Physics ±3

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

+1.5

Presentation ±1

- Clear and understandable
- Appropriate manner
- Overall impression

+0

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

+1/2

Final Grade: Reporter

7

Opp.: Anjun Panurana
Kenya 5

Physics ±3

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

+0

Presentation ±1

- Clear and understandable
- Appropriate manner
- Overall impression

0

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

+1/2

Final Grade: Opponent

6

Rev.: Jakub Doležal
Czech 5

Physics ±3

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

0

Presentation ±1

- Clear and understandable
- Appropriate manner
- Overall impression

0

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

+1

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**

Scoring Guidelines

Fight (Round no.): 5 Room: 4 Stage: 3 Problem no.: 1116

Juror: DEINLEIN Signature: Dein

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.: Swiss 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) *could be improved*
- 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.: 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.: Green 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

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**

Scoring Guidelines

Fight (Round no.): 5 Room: K Stage: 3 Problem no.: 16

Juror: Chan Ding Park Signature: Chan Ding Park

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.: Switzerland 5

Physics ±3

- Correct and relevant physics +1.0
- Scientific approach +0.5
- Validity of conclusions
- Accurate answers

Presentation ±1

- Clear and understandable
- Appropriate manner
- Overall impression

Reporter ±1

- Quality of experimental technique(s) -0.5
- Structure +0.2
- Explanation of formulae and symbols +0.3
- 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

8

Opp.: Kenya 5

Physics ±3

- Correct and relevant physics 0
- Scientific approach
- Validity of conclusions
- Accurate answers

Presentation ±1

- Clear and understandable
- Appropriate manner
- Overall impression

Opponent ±1

- Response to the reporter's solution -1.0
- Shows the strong and weak points of the report -0.5
- Finds shortcomings or errors in the report -0.5
- Relevance of the questions
- Contribution to the discussion

Final Grade: Opponent

4

Rev.: Czech Rep 5

Physics ±3

- Correct and relevant physics +0.5
- 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 +0.5
- 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

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**