Scoring Gui	idelii	nes
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Fight (Round no.): Fight (Round no.):	Stage: Problem no.:	4
Juror: Lobyshw	Signature: Vladu	

• 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

- 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	Орр.:	Rev.:
	A WAR	
Physics ±3	Physics ±3	Physics ±3
☐ 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	Presentation ±1	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	Opponent ±1	Reviewer ±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		This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report		archive your partial B
☐ Contribution to the discussion		do not bend
Final Grade: Reporter	Final Grade: Opponent Revised	Final Grade: Reviewer after IOC feedback and approved by EC on 2011-11-03



Scoring Guidelines

ight (Round no.): FNAL Room: _	Stage:	Problem no.: 4
17 1 15	gnature: hul	M

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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Rep.: CHNA 5	Opp.: POLANO 5	Rev.: SINGAPORE 5
Physics ±3 Correct and relevant physics Scientific approach Validity of conclusions	Physics ±3 Correct and relevant physics Scientific approach Validity of conclusions	Physics ±3 ☐ Correct and relevant physics ☐ Scientific approach ☐ Validity of conclusions
□ Accurate answers Presentation ±1	Presentation ±1	Presentation ±1
☐ Clear and understandable☐ Appropriate manner☐ Overall impression	☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression	☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression
Reporter ±1	Opponent ±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 		This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report	D alup	archive your parties a
☐ Contribution to the discussion	Pound up -consiglaras	do not bend
Final Grade: Reporter	Final Grade: Opponent	Final Grade: Reviewer Final Grade: Reviewer after IOC feedback and approved by EC on 2011-11-03



Scoring	Guidel	lines
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Fight (Round no.): Final Ro	oom: Stage:	1 Problem no.:
luror: Naruus	Signature:	NS.

• 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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 Don't punish missing 'answers' when no 	questions were posed or not finding shortco	mings if there were none to find.
Rep.: 5	Opp.: Poland 5	Rev.: Imgapere 5
Physics ±3	Physics ±3	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
not convincing Presentation #1	Presentation ±1 +06	Presentation ±1 +0,9
☐ Clear and understandable	☐ Clear and understandable	Clear and understandable
☐ Appropriate manner	☐ Appropriate manner	Appropriate manner
Overall impression	Overall impression	Overall impression
Reporter ±1	Opponent ±1	Reviewer ±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 		This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please
☐ Novelty of the report		archive your parties o
Contribution to the discussion		do not bend
Final Grade: Reporter	Final Grade: Opponent Revise	Final Grade: Reviewer d after IOC feedback and approved by EC on 2011-11-03



Scoring	Guidel	lines
JUUIIIII	Junaci	

Fight (Round no.): _	F	_ Room:	M	_ Stage:	1	_ Problem no.: _	5
Juror: PLES	CH	Si	gnatu	re:	0-	-)

• 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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Rep.: 5	Орр.:	Rev.:
Physics ±3	Physics ±3	Physics ±3
☐ 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	Presentation ±1	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	Opponent ±1	Reviewer ±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
☐ Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	by the reporter or the opponent
 References, proper citations of ideas and input of others 		This sheet will be collected by the fight assistant, so we can scan it and fight assistant, articl grades – please
☐ Novelty of the report		archive your partial gran
☐ Contribution to the discussion		do not bend
Final Grade: Reporter	Final Grade: Opponent Revised	Final Grade: Reviewer Lafter IOC feedback and approved by EC on 2011-11-03



Scoring	Guidel	lines

Fight (Round no.):	F	Room:	St	age:	Prob	lem no.:	
Juror: Kallyn	New	are	Signature:	HC	M	1	

• 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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Jen. 1 panilari i i i i i i i i i i i i i i i i i i		
Rep.: Chiva 5	Opp.: Poland 5	Rev.: Review 5
Physics ±3	Physics ±3	Physics ±3
☐ 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	Presentation ±1	Presentation ±1
(Clear and understandable	☐ Clear and understandable	☐ Clear and understandable
☐ Appropriate manner	Appropriate manner reed to be	☐ Appropriate manner
Overall impression	Overall impression guesting	Overall impression
Reporter ±1 +/2	Opponent ±1	Reviewer ±1
Quality of experimental technique(s) was much of w	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		This sheet will be collected by the fight assistant, so we can scan it and
✓ Novelty of the report		archive your parties g.
☐ Contribution to the discussion	*	do not bend
Final Grade: Reporter	Final Grade: Opponent	Final Grade: Reviewer after IOC feedback and approved by EC on 2011-11-03



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ight (Round no.): Fin	_Room: _	A	_ Stage: _	1	_ Problem no.:	03/
uror: lega MARTEN	ENKO:	Signatu	ire:		Dr	-

• 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

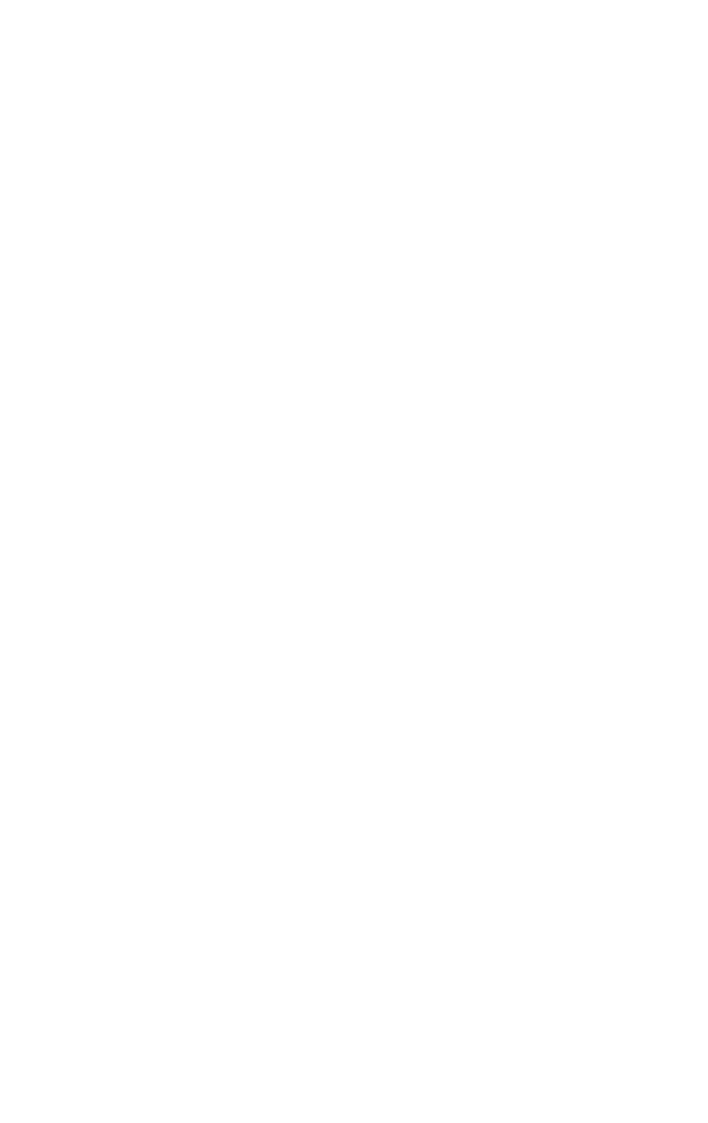
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 Don't punish missing 'answers' when no 	questions were posed or not finding shortco	mings if there were none to find.
Rep.: 5	Opp.: Poland 5	Rev.: Souga Po Ro 5
Physics ±3	Physics ±3	Physics ±3 +2
☐ Correct and relevant physics	Correct and relevant 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	Presentation ±1	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	Opponent ±1	Reviewer ±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	Expresses own opinion about
☐ Explanation of formulae and	of the report	topics presented or discussed
symbols Appropriate models, conformity	Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent
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		This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report		archive your partial grown
☐ Contribution to the discussion		do not bend
Final Grade: Reporter	Final Grade: Opponent	Final Grade: Reviewer



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Scoring	Guide	lines
Scolling	Udide	

ight (Round no.): Fixal	Room:	Stage: 1	Problem no.:	4
iror: Yung-Yuan)	LSu . Signatur	90 -	Than?	Ann

• 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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 Don't punish missing 'answers' when no 	questions were posed or not finding shortcom	mings if there were none to find.
Rep.: Zhenyan Gory 5	Opp.:5	Rev.: Lee Yu Tze 5
Physics ±3	Physics ±3	Physics ±3
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	Presentation ±1	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	Opponent ±1	Reviewer ±1
Quality of experimental technique(s)	Response to the reporter's	 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
☐ Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	by the reporter or the opponent
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report		fight assistant, so we can archive your partial grades – please
☐ Contribution to the discussion	_	do not bend
Final Grade: Reporter	Final Grade: Opponent	Final Grade: Reviewer after IOC feedback and approved by EC on 2011-11-03



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Scori	ina	GII	ide	lines
	III	UU	IUC	

ight (Round no.):	Final Room:	Stage:	1	Problem no.: _	4
uror: Felicia	Ullstal sign	nature: Fol	Un	Melal	,

• 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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Rep.: China	Opp.: Poland	Rev.: Singipore 5
5	5	3
Physics ±3	Physics ±3	Physics ±3
100011 Par	17 109	CEPTE A LONG
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	Procentation +1	Proportation 11
Presentation ±1	Presentation ±1	Presentation ±1
☐ Clear and understandable	Clear and understandable	│ ☐ Clear and understandable
☐ Appropriate manner	Appropriate manner	Appropriate manner
☐ Overall impression /	Overall impression	Overall impression
(1)		
Reporter ±1 -0.5	Opponent ± 1 $+ 0.5$	Reviewer ±1 4 4 + 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	☐ Finds shortcomings or errors in	Relevance of questions to both the
symbols —	the report	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		This sheet will be collected by the fight assistant, so we can scan it and
All the second s		fight assistant, so we can be archive your partial grades - please
☐ Novelty of the report		archive your parties o
☐ Contribution to the discussion		do not bend
Final Grade: Reporter	Final Grade: Opponent Revised	Final Grade: Reviewer d after IOC feedback and approved by EC on 2011-11-03



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Scoring	Guia	eiines

FII	SITC	(11
Fight (Round no.):	Room:	Stage:	Problem no.	: 7
Juror: J-BAC	DMBP Sign	ature:	201	,

• 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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 Don't punish missing 'answers' when no 	questions were posed or not finding shortcor	nings if there were none to find.
Rep.: CHINA 5	Opp.: POZAND 5	Rev.: SINCAPORE 5
Physics ±3	Physics ±3	Physics ±3
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	Presentation ±1	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	Opponent ±1	Reviewer ±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		This sheet will be collected by the fight assistant, so we can scan it and
Novelty of the report		archive your partial great
Contribution to the discussion		do not bend
Final Grade: Reporter	Final Grade: Opponent	Final Grade: Reviewer after IOC feedback and approved by EC on 2011-11-03



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	IIIIG	Guia	C	

ight (Round no.):	Room:	Stage:	Problem no.:	
uror: Osterution	Signa	ture: F. Osl	in	

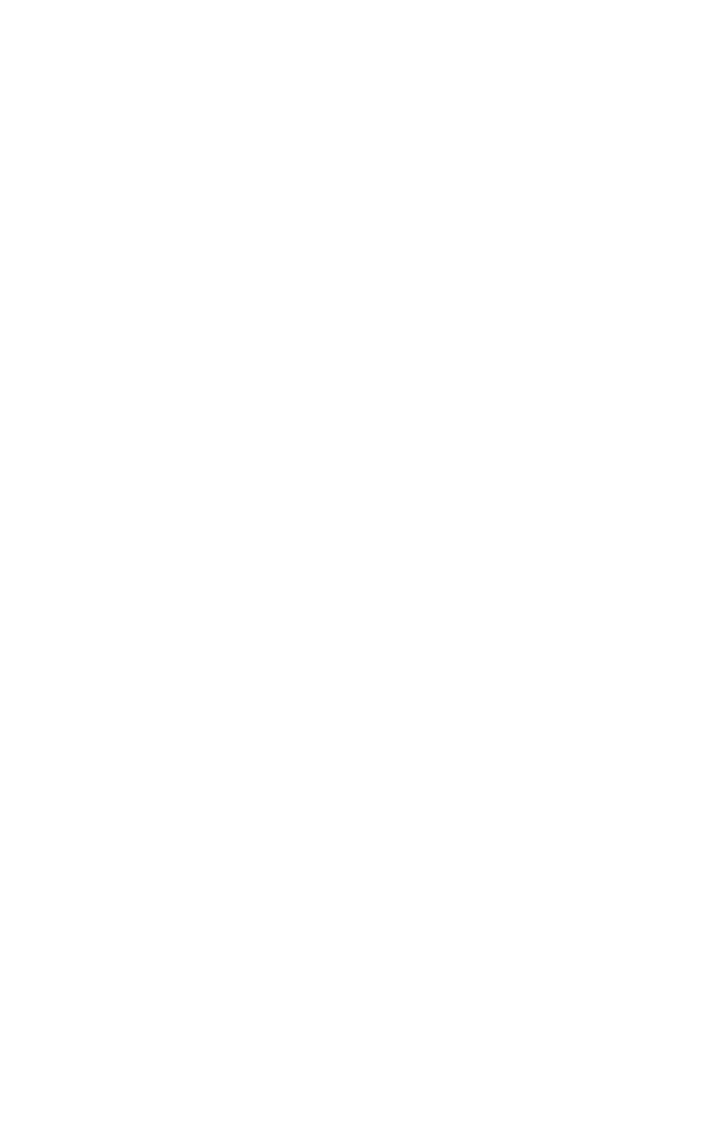
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• Doll (buillish Hillssing answers when the	questions were posed of not infam a shortes	mings in their male meneral miner
Rep.: Chiya 5	Opp.: Roland 5	Rev.: Sigapore 5
Physics ±3	Physics ±3	Physics ±3
☐ Correct and relevant physics	Correct and relevant 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	Presentation ±1	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	Opponent ±1	Reviewer ±1 66 toc5
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		This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report		archive your partial grad
☐ Contribution to the discussion		do not bend
Final Grade: Reporter	Final Grade: Opponent 7	Final Grade: Reviewer



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Scoring	GILIDP	lines
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ight (Round no.):	Final Room	elle ligare Sta	age: 1	Problem no.:	
uror: Andre:		Signature:	Karry	mer	

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

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

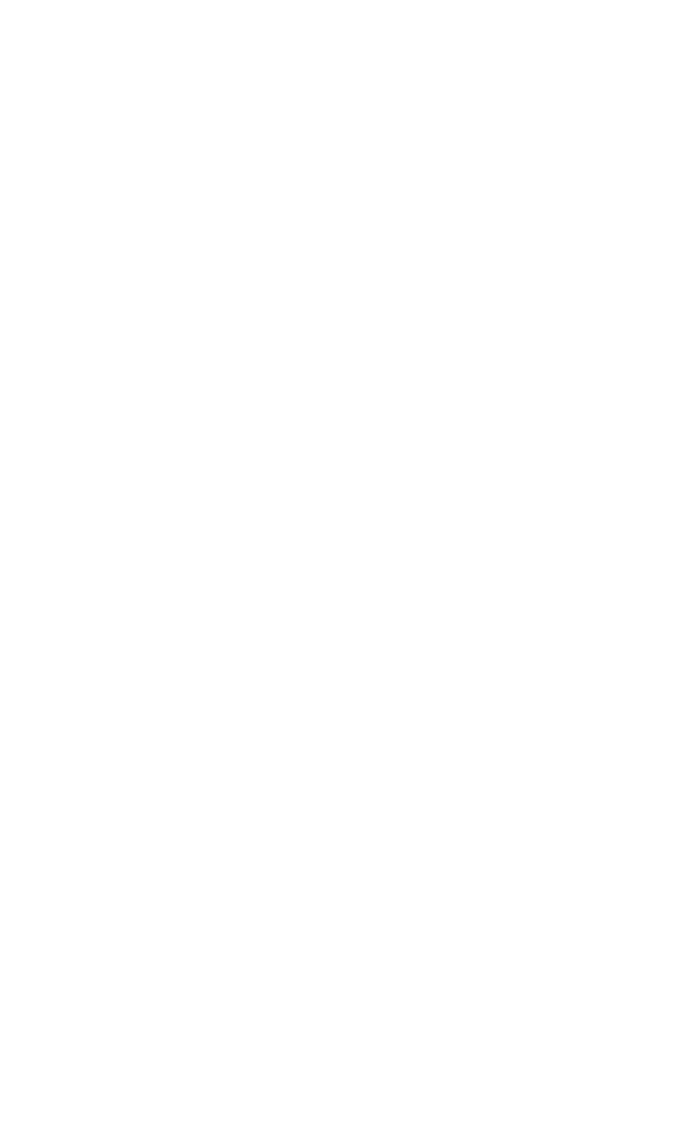
An opposition should show that:

• 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 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

Don't pullish missing answers when no	questions were posed of flot infullig shorted	illings if there were none to find.
Rep.: China 5	Opp.: Poland Rodoyl Wodzkurzz 5	Rev.: Sluggbore 5
Physics ±3	Physics ±3	Physics ±3 →7
☐ 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	Presentation ±1	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	Opponent ±1	Reviewer ±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		This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report		archive your partial grow
☐ Contribution to the discussion		do not bend
Final Grade: Reporter	Final Grade: Opponent	Final Grade: Reviewer



Scoring G	iuidelines
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Fight (Round no.):	Room:	Stage:	511	Problem no.:
Juror: Lolyshe	V_	Signature:	Who	ele

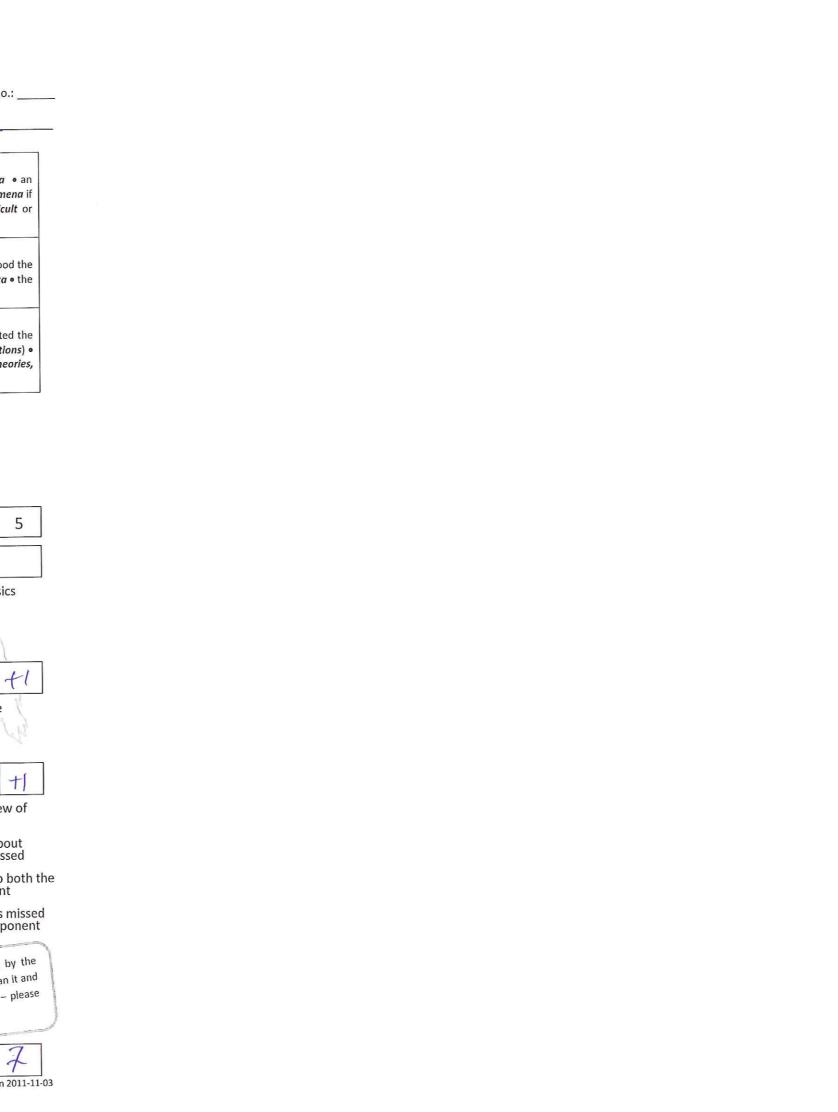
• a presentation of the appropriate concepts, theories and principles of the problem • an explanation of the observed phenomena • an application of appropriate mathematics • reasonable experimental technique to gather and record data (or demonstrate the phenomena if appropriate) • linking of theoretical 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

- 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

 Don't punish missing 'answers' when no 	questions were posed or not finding shortco	mings if there were none to find.
Rep.: 5	Opp.:5	Rev.:5
Physics ±3	Physics ±3	Physics ±3
☐ 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	Presentation ±1	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	Opponent ±1	Reviewer ±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		This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report		archive your parties a
☐ Contribution to the discussion		do not bend
Final Grade: Reporter	Final Grade: Opponent	Final Grade: Reviewer dafter IOC feedback and approved by EC on 2011-11-03



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Fight (Round no.): FINAL Room:	Stag	e: 2	_ Problem no.: _	5
Juror: Kent Hagan	Signature:	hel	Problem no.: _	

• 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

- 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 5	Opp.: SINGAPORE 5	Rev.: CHINA 5
Physics ±3	Physics ±3	Physics ±3
☐ 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.	Presentation ±1 + 1/z	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 -1/2	Opponent ±1	Reviewer ±1
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
Structure problem investigate	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
☐ Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	by the reporter or the opponent
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report		archive your partial grades
☐ Contribution to the discussion		do not bend
Final Grade: Reporter	Final Grade: Opponent	Final Grade: Reviewer 6



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Fight (R	ound no.): Find	Room:	St	age: 2	Problem no.:	5
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Juror:	Varun		Signature:	/ W	0	

• 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 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.

	on and write it in the corresponding box.	
Don't punish missing 'answers' when no	questions were posed or not finding shortco	mings if there were none to find.
Rep.: Poland 5	Opp.: Singapore 5	Rev.:
Physics ±3	Physics ±3	Physics ±3
☐ 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
- //\	(-)	1/ TAP > 1 -
Presentation ±1	Presentation ±1	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 +0.9	Opponent ±1	Reviewer ±1 66 +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	Danse at the end.
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report		archive your partial grown
Contribution to the discussion		do not bend
Final Grade: Reporter	Final Grade: Opponent	Final Grade: Reviewer after IOC feedback and approved by EC on 2011-11-03



Scoring Guidelines	Fight (Round no.): F Room: F Stage: Problem no.: Juror: Signature:
application of appropriate mathematics • reasonable	es and principles of the problem • an explanation of the observed phenomena • an experimental technique to gather and record data (or demonstrate the phenomena if tal findings to draw suitable conclusions • an attempt to communicate difficult or other.
	ing of the presented concepts, theories and principles • the opponent understood the ritiqued the experimental technique used and questioned the validity of the data • the and weaknesses of the report

A review should show that:

- 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	Opp.:5	Rev.: 5
Physics ±3	Physics ±3	Physics ±3
☐ 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	Presentation ±1	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	Opponent ±1	Reviewer ±1 8 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		This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report		archive your partial st
☐ Contribution to the discussion		do not bend
Final Grade: Reporter	Final Grade: Opponent	Final Grade: Reviewer



Scoring Guidelin	Fight (Round no.): F Room Juror: Kalhyn Teally	n: Stage: Z Problem no.: Signature:
application of appropriate mathematics • re-	s, theories and principles of the problem • an a asonable experimental technique to gather and aperimental findings to draw suitable conclusion lable manner	record data (or demonstrate the phenomena if
An opposition should show that: • the opponent challenged the reporter's unappropriate mathematics presented • the oppopenent appreciated and highlighted the str	derstanding of the presented concepts, theories ponent critiqued the experimental technique use engths and weaknesses of the report	and <i>principles</i> • the opponent understood the ed and questioned the <i>validity</i> of the <i>data</i> • the
Important aspects (especially the controvers	tive summary of the performances the reporter ial ones) • the reviewer's personal opinion was in-trivial and demonstrated, where possible, the reporter and the opponent	n evidence (not just superficial observations) •
 The reporter, opponent and reviewer expensions Consider the following suggestions to expensions Select each partial grade from each second 	consists of a partial grade for <i>physics, present</i> each <i>start with 5 points</i> . add to or <i>deduct</i> from the initial <i>5 points</i> . ction and <i>write it</i> in the corresponding box. o questions were posed or not finding shorter.	
5		5
Physics ±3	111/516525	Physics ±3
Correct and relevant physics	Correct and relevant physics	Correct and relevant physics
Scientific approach	Scientific approach Validity of conclusions	☐ Scientific approach ☐ Validity of conclusions
☐ Validity of conclusions ☐ Accurate answers	Accurate answers	Accurate answers
where entation ±1	Presentation ±1	Presentation ±1
Clear and understandable	☐ Clear and understandable	Clear and understandable
Appropriate manner	Appropriate manner	Appropriate manner
Overall impression	Overall impression	Overall impression
F 1 / 1		77 71

• The reporter, opponent and reviewer ea		tion and for their specific role.
 Consider the following suggestions to ac Select each partial grade from each sections 	on and write it in the corresponding box.	
	questions were posed or not finding shortcom	nings if there were none to find.
Rep.: Pdand 5	Opp.: Snapare 5	Rev.: 5
Physics ±3	Physics ±3	Physics ±3
☐ 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
Very basic inestrated	Presentation ±1	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 + \(\frac{1}{2}\)	Opponent ±1	Reviewer ±1
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion Ly symmany
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	needed to emphasize deflation	This sheet will be collected by the fight assistant, so we can scan it and
■ Novelty of the report	rajosos s	archive your partial 8.
☐ Contribution to the discussion		do not bend
Final Grade: Reporter	Final Grade: Opponent Revised	Final Grade: Reviewer after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): _	Fin Room:	A	_ Stage: _	2	_ Problem no.: _	5
Juror: Rya M	ARTCUEU	্ট্রা gnatuı	re:/		02	

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

- 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 5	Opp: Tingapore 5	Rev.: Chilun 5
Physics ±3	Physics ±3	Physics ±3
☐ 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	Presentation ±1	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	Opponent ±1	Reviewer ±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		This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report		archive your partial s.
☐ Contribution to the discussion		do not bend
Final Grade: Reporter	Final Grade: Opponent 6	Final Grade: Reviewer I after IOC feedback and approved by EC on 2011-11-03

Scoring	Guidelines
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Fight (Round no.): Find Room:	Stage: 2, Problem no.:	5
	Signature: They year He	hu

• 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 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.: Anna Wald. 5 Polanel.	Opp.: Shen in Jun. 5 Singapore 5	Revision 13
Physics ±3	Physics ±3	Physics ±3
Correct and relevant physics	Correct and relevant physics	☐ Correct and relevant physics
Scientific approach 1091c proplen	Scientific approach	☐ Scientific approach
☐ Validity of conclusions ✓	☐ Validity of conclusions	☐ Validity of conclusions
☐ Accurate answers	Accurate answers	☐ Accurate answers
		NEED O
Presentation ±1	Presentation ±1	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	Opponent ±1	Reviewer ±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
Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	by the reporter or the opponent
 References, proper citations of ideas and input of others 		This sheet will be collected by the fight assistant, so we can scan it and fight assistant as a strial grades – please
☐ Novelty of the report		archive your partial a
Contribution to the discussion		do not bend
Final Grade: Reporter	Final Grade: Opponent	Final Grade: Reviewer after IOC feedback and approved by EC on 2011-11-03



Sco	ring	Gu	ide	lin	es

7	Final		0			5
ight (Round no.):	Room:	Stage:	1	Problen	n no.:	2
uror: Felicia	Ulls tadsign	ature: 7	-ll	Un	U	les

• 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

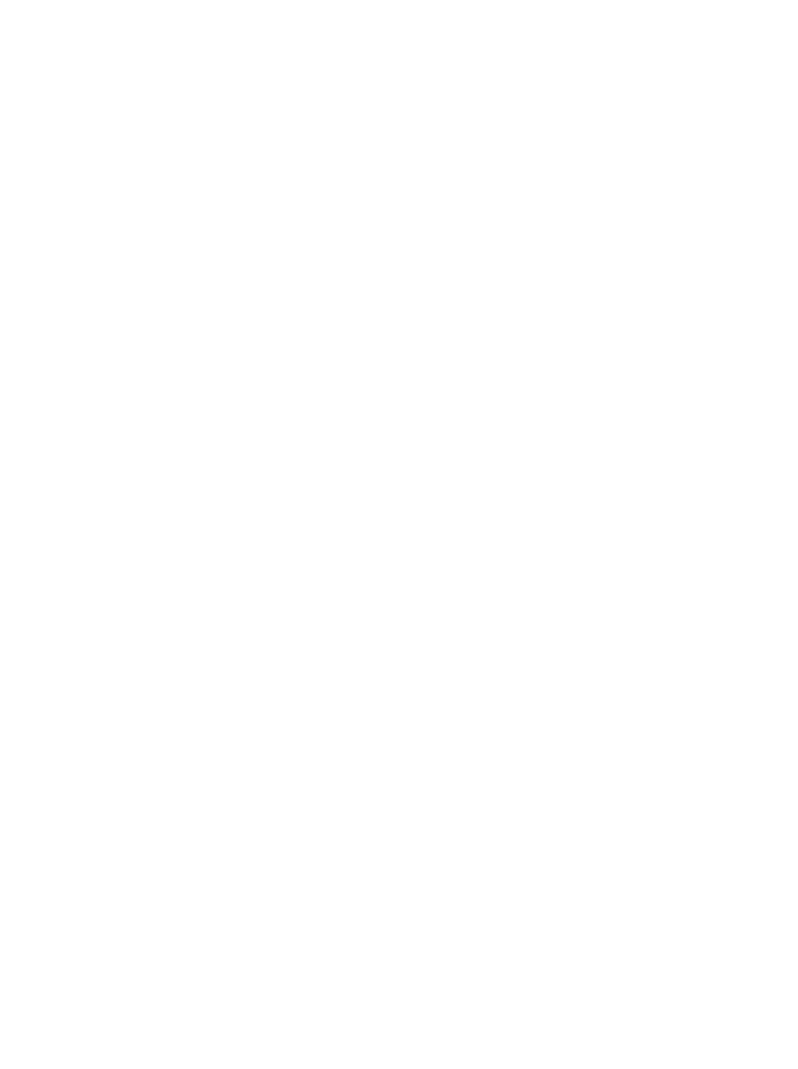
An opposition should show that:

• 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 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 5	Opp.: Singapure 5	Rev.: China 5
Physics ±3	Physics ±3	Physics ±3 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	Presentation ±1	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	Opponent ±1	Reviewer ±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
☐ Slides, on-site experiments, audio, video, as appropriate ← ←	☐ Contribution to the discussion 4	by the reporter or the opponent
 References, proper citations of ideas and input of others 		This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report —		archive your parties 8
☐ Contribution to the discussion		do not bend
Final Grade: Reporter 5	Final Grade: Opponent Revised	Final Grade: Reviewer after IOC feedback and approved by EC on 2011-11-03



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MNA	L	2		5
ight (Round no.):	Room:	Stage:	Problem no.:	0
uror: J.BACCO	MBF_Sign	ature: Ho	Ba	

• 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

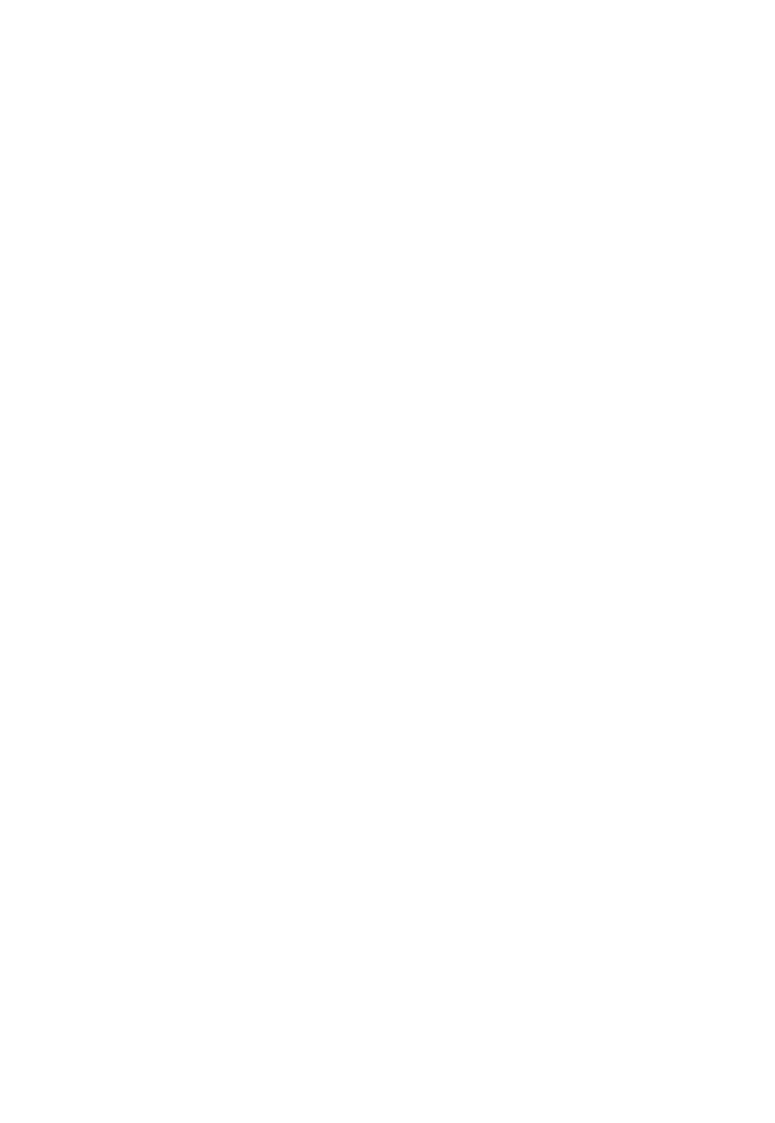
An opposition should show that:

• 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 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 5	Opp.:SINGAPORE 5	Rev.: CHINA 5			
Physics ±3	Physics ±3	Physics ±3			
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	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 + 0.5	Opponent ±1	Reviewer ±1 8 4 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		This sheet will be collected by the fight assistant, so we can scan it and			
Novelty of the report		archive your partial great			
Contribution to the discussion		do not bend			
Final Grade: Reporter	Final Grade: Opponent	Final Grade: Reviewer after IOC feedback and approved by EC on 2011-11-03			



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		UUIU	CIIIICS

ight (f	Round no.): _	7 R	oom:	Stage: _	2	Problem no.:	5	_
uror:	OSTERA	Mon	Signati	ure: Ŧ.	Ost	me		

• 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 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.: Poloulol 5	Opp.: Singerpore 5	Rev.: Review 5
Physics ±3	Physics ±3	Physics ±3
☐ 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	Dyscantation #1	WEAD MAR
Presentation ±1	Presentation ±1	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 0,5	Opponent ±1	Reviewer ±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
Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	by the reporter or the opponent
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report		archive your partial star
☐ Contribution to the discussion		do not bend
Final Grade: Reporter	Final Grade: Opponent Revised	Final Grade: Reviewer after IOC feedback and approved by EC on 2011-11-03



Sco	rina	Guide	lines
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ight (Round no.): Fud	Room: 1/2 By Oux Stage:	2	_ Problem no.:	5	
uror: Audser Kushs		/	unas		

• 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

- 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.: Polous 5	Opp.: Suga pore 5	Rev.: Cha
Anne wold	Yu ku shen	John ys
Physics ±3	Physics ±3	Physics ±3
☐ 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
Procentation 41		1 5 6 B
Presentation ±1	Presentation ±1	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	Opponent ±1	Reviewer ±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
The Arthur Manager Control of the Co	3	by the reporter or the opponent
☐ Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	1 by the
 References, proper citations of ideas and input of others 		This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report		archive your partial grow
☐ Contribution to the discussion		do not bend
Final Grade: Reporter	Final Grade: Opponent Revised	Final Grade: Reviewer after IOC feedback and approved by EC on 2011-11-03



Sco	rina	Gui	de	lines
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3	7	7	17
Fight (Round no.):	Room:	Stage: ≥	_ Problem no.:
luror: Lobes	I her Sign	ature: Vler	leen

• 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

- 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.:	Орр.:	Rev.:
1 5	5	5
Physics ±3	Physics ±3	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
	1	12 B B B B B B B B B B B B B B B B B B B
Presentation ±1	Presentation ±1	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	Opponent ±1	Reviewer ±1 4 + 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		This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report		archive your partial s.
☐ Contribution to the discussion		do not bend
Final Grade: Reporter	Final Grade: Opponent Revised	Final Grade: Reviewer Lafter IOC feedback and approved by EC on 2011-11-03



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Scoring	Guidelines)

Fight (Round no.): Room:	_ Stage: 3 Problem no.: 13	,
Juror: Kent Hagan Signatu	ure: Jul M	

• 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

- 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 5	Opp.: CHINA 5	Rev.: POLANO 5
Physics ±3	Physics ±3	Physics ±3
☐ 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 + 1/2	Presentation ±1	Presentation ±1 + 1/2
☐ Clear and understandable	Clear and understandable	Clear and understandable
☐ Appropriate manner	Appropriate manner	Appropriate manner
Overall impression	Overall impression	Overall impression
Reporter ±1	Opponent ±1	Reviewer ±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	Relevance of questions to both the
☐ Appropriate models, conformity	the report	reporter and the opponent
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 		This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report		archive your partial grades
☐ Contribution to the discussion		do not bend
Final Grade: Reporter	Final Grade: Opponent Revised	Final Grade: Reviewer after IOC feedback and approved by EC on 2011-11-03



Scoring	Guidel	lines
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ght (R	ound no.):	Room:	Stage:	_ Problem no	:15
ıror:	Narun	Sign	ature:	B.	

• a presentation of the appropriate concepts, theories and principles of the problem • an explanation of the observed phenomena • ar application of appropriate mathematics • reasonable experimental technique to gather and record data (or demonstrate the phenomena is 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

- 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.

Don't punish missing answers when no	questions were posed of not finding shortco	mings if there were none to mid.
Rep.: Singapore 5	Opp.: China 5	Rev.: Poland 5
Physics ±3	Physics ±3	Physics ±3
☐ 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	Presentation ±1 +0.5	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 + 1	Opponent ±1	Reviewer ±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		This sheet will be collected by the fight assistant, so we can scan it and fight assistant, as tipl grades – please
☐ Novelty of the report		archive your partial 8.2
Contribution to the discussion		do not bend
Final Grade: Reporter	Final Grade: Opponent Revised	Final Grade: Reviewer d after IOC feedback and approved by EC on 2011-11-03

no.: <u>13</u>	
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n 2011-11-03	

Scoring Guidelines	Fight (Round no.): Room: F Stage: Problem no. 1 Juror: PUR SEH Signature:
application of appropriate mathematics • reasonable	s and principles of the problem • an explanation of the observed phenomena • an experimental technique to gather and record data (or demonstrate the phenomena if al findings to draw suitable conclusions • an attempt to communicate difficult or

ena if ult 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 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	Opp.:5	Rev.: 5
Physics ±3	Physics ±3	Physics ±3
☐ 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	Presentation ±1	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	Opponent ±1	Reviewer ±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		This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report		archive your partial gra
☐ Contribution to the discussion		do not bend
Final Grade: Reporter	Final Grade: Opponent Revised	Final Grade: Reviewer after IOC feedback and approved by EC on 2011-11-03



Scoring Guidelines

I	17	
Fight (Round no.): Room:	Stage: Problem no.: 1	0.0
Juror: Kathan Toalord sig	gnature: KWW	

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 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.: Simpore 5	Opp.: Chang 5	Rev.: Polard 5
Physics ±3	Physics ±3	Physics ±3
☑ 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	Presentation ±1	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	Opponent ±1	Reviewer ±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		This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report		archive your parties a
☐ Contribution to the discussion		do not bend
Final Grade: Reporter	Final Grade: Opponent	Final Grade: Reviewer Jafter IOC feedback and approved by EC on 2011-11-03



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		II W		

Fight (Round no.): Tin Room: _	A st	age: 3	Problem no.: 13
Juror: Lega WARTENENKOS	ignature:		m

• 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 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.: Sugapore 5	Opp.: Chian 5	Rev.: levieux 5
Physics ±3	Physics ±3	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.	Presentation ±1	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	Opponent ±1	Reviewer ±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
☐ Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	by the reporter or the opponent
 References, proper citations of ideas and input of others 		This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report		archive your partial gra
☐ Contribution to the discussion		do not bend
Final Grade: Reporter	Final Grade: Opponent	Final Grade: Reviewer I after IOC feedback and approved by EC on 2011-11-03



Scoring Guidelin	es Fight (Round no.): Toom: Prop - Wan Hay	Stage: 3 Problem no.: 3 Signature: Jung-Yuan Stale,
application of appropriate mathematics • rea	, theories and principles of the problem • an expensionable experimental technique to gather and reperimental findings to draw suitable conclusionable manner	cord data (or demonstrate the phenomena if
NEO	derstanding of the presented concepts, theories a conent critiqued the experimental technique used angths and weaknesses of the report	101. 0 0 0
important aspects (especially the controversion	ive summary of the performances the reporter at ones) • the reviewer's personal opinion was in -trivial and demonstrated, where possible, the review the reporter and the opponent	evidence (not just superficial observations) •
 The reporter, opponent and reviewer ex Consider the following suggestions to a Select each partial grade from each sect 	onsists of a partial grade for physics, presented ach start with 5 points. dd to or deduct from the initial 5 points. ion and write it in the corresponding box. questions were posed or not finding shortco Opp: Guan the Conp	
Physics ±3 Correct and relevant physics Scientific approach Validity of conclusions Accurate answers	Physics ±3 Correct and relevant physics Scientific approach Validity of conclusions Accurate answers	Physics ±3 Correct and relevant physics Scientific approach Validity of conclusions Accurate answers
Presentation ±1 Clear and understandable Appropriate manner Overall impression	Presentation ±1 Clear and understandable Appropriate manner Overall impression	Presentation ±1 Clear and understandable Appropriate manner Overall impression
Reporter ±1 Quality of experimental technique(s)	Opponent ±1 Response to the reporter's solution	Reviewer ±1 Provides a thorough review of report and discussion
Explanation of formulae and symbols real formula used? Appropriate models, conformity	Shows the strong and weak points of the report Finds shortcomings or errors in the report	Expresses own opinion about topics presented or discussed Relevance of questions to both the reporter and the opponent
of dimensions Slides, on-site experiments, audio, video, as appropriate References, proper citations of	☐ Relevance of the questions ☐ Contribution to the discussion	Draws attention to points missed by the reporter or the opponent This sheet will be collected by the
ideas and input of others Novelty of the report Contribution to the discussion		This sheet will be collected fight assistant, so we can scan it and archive your partial grades - please do not bend

Final Grade: Reviewer

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

☐ Contribution to the discussion

Scorina	Guidelines
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	#	7	17
Fight (Round no.): _	Room:	Stage:	Problem no.
Juror: Felicia	Ullstad	Signature: Fllds	- Men

• 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 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.: Singa poro 5	Opp.: China 5	Rev.: Poland 5
Physics ±3 Correct and relevant physics Scientific approach Validity of conclusions Accurate answers Presentation ±1	Physics ±3 Correct and relevant physics + - Scientific approach Validity of conclusions - Accurate answers Presentation ±1	Physics ±3 Correct and relevant physics + Scientific approach Validity of conclusions Accurate answers Presentation ±1
☐ Clear and understandable ↑ ☐ Appropriate manner ↑ ☐ Overall impression ↓ Reporter ±1	Clear and understandable — Appropriate manner Overall impression — Opponent ±1	Clear and understandable Appropriate manner Overall impression Reviewer ±1
☐ Quality of experimental technique(s) ↓	Response to the reporter's solution — Shows the strong and weak points	☐ Provides a thorough review of report and discussion ∤☐ Expresses own opinion about
 □ Explanation of formulae and symbols + □ □ Appropriate models, conformity of dimensions * 	of the report Finds shortcomings or errors in the report 1. Relevance of the guestions	topics presented or discussed ↓ Relevance of questions to both the reporter and the opponent ↓ Draws attention to points missed
 Slides, on-site experiments, audio, video, as appropriate → References, proper citations of ideas and input of others → 	☐ Contribution to the discussion	This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report☐ Contribution to the discussion	Final Grade: Opponent 5	fight assistant, so we con- archive your partial grades – please do not bend Final Grade: Reviewer
Final Grade: Reporter	Revised	after IOC feedback and approved by EC on 2011-11-03



Scoring	Guidell	ines
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ight (Round no.):	Room:	Stage:	Problem no.:	_
uror: J.BAZC	8m BF Signa	ture: H2	Be	

• 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 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 shortco	omings if there were none to find.
Rep.: Swythook 5	Opp.: CHINA 5	Rev.: POLAND 5
Physics ±3	Physics ±3	Physics ±3
☐ Correct and relevant physics	Correct and relevant physics	☐ €orrect 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	Presentation ±1	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	Opponent ±1	Reviewer ±1 6 + 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	Expresses own opinion about topics presented or discussed
☐ Explanation of formulae and	of the report	
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		This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report		archive your partial B.
☐ Contribution to the discussion		do not bend
Final Grade: Reporter	Final Grade: Opponent Seviser	Final Grade: Reviewer dafter IOC feedback and approved by EC on 2011-11-03



Scoring	Guidel	ines

Fight (Round no.):	Room:	Stage: 7 Problem no.: 13
lurar OSTERNAL ER		Signature: 7. Osh

• 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 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 5	Opp: China 5	Rev.: Poland 5
Physics ±3	Physics ±3	Physics ±3
☐ 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	Presentation ±1	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	Opponent ±1	Reviewer ±1 6 +0,75
 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
☐ Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	by the reporter or the opponent
 References, proper citations of ideas and input of others 		This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report		archive your partial B
☐ Contribution to the discussion		do not bend
Final Grade: Reporter	Final Grade: Opponent	Final Grade: Reviewer Lafter IOC feedback and approved by EC on 2011-11-03



Scoring Guidelines

ight (Round no.): Fred Room The Be Roustage: Problem no.: 1

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

- 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.: Grugo Fore 5	Opp.: Chung 5	Rev.: Poland 5
loke fru tong	Guouge Grores	Frederic 5
Physics ±3	Physics ±3	Physics ±3
☐ 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	Presentation ±1	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	Opponent ±1	Reviewer ±1 A +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 	W 0	
	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 		This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report		fight assistant, so we can obtain a specific archive your partial grades – please
☐ Contribution to the discussion		do not bend
Final Grade: Reporter	Final Grade: Opponent Revised	Final Grade: Reviewer after IOC feedback and approved by EC on 2011-11-03

FINAL

1YPT 2015
Theiland Fight Assistants: BUC WOLFGANG | HELL TIMOTHEUS
Nakhon Retchesing

Nakhon letches	1	Stage 1			Stage 2			Stage 3	
Team	China	POLAND	SWATFORE	POL	SIW	chi	SIN	CHI	POL
Juror	Rep	Орр	Rev	Rep	Орр	Rev	Rep	Орр	Rev
KLISHIN A.	4	8	7	9	7	5	10	6.	8
OSTERMAIER F.	5	7	7	6	7	6	6	6	8
BALCOMBE J.	7	8	8	7	8	6	9	5	6
ULLSTAD F.	6	87	8	5	7	5	9	5	8
HSU Y.	3	\$7	8	6	6	6	7	7	6
MARTCHENKO I.	5	89	8	8	6	7	8	6	7.
ZEALAND C.	6	48	7	7	7	6	9	6	8
PLESCH M.	5	87	7	6	7	6	9	5	A X
SUWONJANDEE N.	7	8	8	6	7	7	8	7	8
409AN H.	6	9	7	6	787	6	8	6	7
LOBYSHEV V.	5	7	8	8	8	7	9	8	9
Acting Team Member Wember 4.	gong thenyan	WASKIEWICZ Zodost	LET TO ISE	WALD	SHEN V JV	Jishong	Men Jun G	cong svorghe	GRA BOWSW
Chosen Problem	4 Liquid	Film Mot	a -	5. 7	wo Ballon	5 A	13 Ma	gnetic iendulum	AL
nature Fight Assistant:	11 /	Double	e-checked wit	h Scoring Guid	delines by secon	d Fight Assista	nt (signature)	94	