	Fight (Round no.): Roo	m: 6 Stage: Problem no.:
Scoring Guideli	nes Juror: Long Sung	Signature:
A report should include:	1 0	
• a presentation of the appropriate conce application of appropriate mathematics • 1	ots, theories and principles of the problem • an reasonable experimental technique to gather and experimental findings to draw suitable conclusinable manner	record data for demonstrate the phenomena if
An opposition should show that: • the opponent challenged the reporter's unappropriate mathematics presented • the copponent appreciated and highlighted the s	inderstanding of the presented concepts, theories apponent critiqued the experimental technique us	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 controver	ctive summary of the performances the reporter sial ones) • the reviewer's personal opinion was in contrivial and demonstrated, where possible, the red by the reporter and the opponent	n evidence (not just superficial observations) .
<ul> <li>The reporter, opponent and reviewer</li> <li>Consider the following suggestions to</li> <li>Select each partial grade from each se</li> </ul>	consists of a partial grade for <i>physics, presen</i> each <i>start with 5 points</i> . <i>add</i> to or <i>deduct</i> from the initial <i>5 points</i> .  ction and <i>write it</i> in the corresponding box.  no questions were posed or not finding shorto	
Rep.: Czech. 5	Opp.: France 5	Rev.: UK 5
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	Presentation ±1	Presentation ±1
<ul><li>Clear and understandable</li><li>Appropriate manner</li><li>Overall impression</li></ul>	☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression	<ul><li>✓ Clear and understandable</li><li>✓ Appropriate manner</li><li>✓ Overall impression</li></ul>
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	
Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	Draws attention to points missed 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: Opponent

Final Grade: Reporter

Final Grade: Reviewer
Revised after IOC feedback and approved by EC on 2011-11-03

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Fight (Round no.): 2 Ro	oom: <u>G</u> Stage	: <u>4</u>	Problem no.:	
Juror: Matthias The	Signature:	H	1 Cesis	

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 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

<ul> <li>The reporter, opponent and reviewer expensions</li> <li>Consider the following suggestions to a select each partial grade from each second</li> </ul>	consists of a partial grade for <i>physics, presen</i> teach start with 5 points.  add to or deduct from the initial 5 points.  Stion and write it in the corresponding box.  To questions were posed or not finding shorter	
Rep.: Ched Rep 5	Opp.: France 5	Rev.: 6B 5
Physics ±3	Physics ±3	Physics ±3 + 1
<ul><li>☐ Correct and relevant physics</li><li>☐ Scientific approach</li><li>☐ Validity of conclusions</li><li>☐ Accurate answers</li></ul>	<ul><li>☐ Correct and relevant physics</li><li>☐ Scientific approach</li><li>☐ Validity of conclusions</li><li>☐ Accurate answers</li></ul>	<ul> <li>□ Correct and relevant physics</li> <li>□ Scientific approach</li> <li>□ Validity of conclusions</li> <li>□ Accurate answers</li> </ul>
Presentation ±1 ± 0  Clear and understandable  Appropriate manner  Overall impression	Presentation ±1 ± 0  ☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression	Presentation ±1
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  Explanation of formulae and	Shows the strong and weak points of the report	Expresses own opinion about topics presented or discussed
symbols  Appropriate models, conformity of dimensions	<ul><li>☐ Finds shortcomings or errors in the report</li><li>☑ Relevance of the questions</li></ul>	Relevance of questions to both the reporter and the opponent  Draws attention to points missed by the reporter or the opponent
☐ Slides, on-site experiments, audio, video, as appropriate ☐ References, proper citations of ideas and input of others	☑ Contribution to the discussion	
Novelty of the report		fight assistant, so we can scent a archive your partial grades – please
Contribution to the discussion  Final Grade: Reporter	Final Grade: Opponent	do not bend Final Grade: Reviewer

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Scoring Guidelii	Fight (Round no.): _2 1 <b>es</b>		m: Stage: Problem no.:				
application of appropriate mathematics • re	easonable <b>experimental technique</b> to <b>xperimental findings</b> to draw <i>suita</i>	aather and	explanation of the observed phenomena • an record data (or demonstrate the phenomena if ons • an attempt to communicate difficult or				
An opposition should show that: • the opponent challenged the reporter's unappropriate mathematics presented • the opponent appreciated and highlighted the state.	pponent <i>critiqued</i> the <i>experimental t</i>	echnique us	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	sial ones) • the reviewer's personal of n-trivial and demonstrated, where p	pinion was i	and opponent • the reviewer appreciated the n evidence (not just superficial observations) • reviewer's understanding of concepts, theories,				
<ul> <li>The reporter, opponent and reviewer exists</li> <li>Consider the following suggestions to exist each partial grade from each sections.</li> </ul>	opposition and reviewer cach start with 3 points.						
Rep.: Creck Republic 5	Opp.: FRANCE	5	Rev.: 6				
Physics ±3  Correct and relevant physics Scientific approach Validity of conclusions Accurate answers	Physics ±3  ☐ Correct and relevant phy ☐ Scientific approach ☐ Validity of conclusions ☐ Accurate answers	(Sics	Physics ±3  Correct and relevant physics Scientific approach Validity of conclusions Accurate answers				
Presentation ±1	Presentation ±1  ☐ Clear and understandabl ☐ Appropriate manner ☐ Overall impression	e	Presentation ±1  ☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression				
Reporter ±1	Opponent ±1	0	Reviewer ±1				
<ul> <li>☐ Quality of experimental technique(s)</li> <li>☐ Structure</li> <li>☐ Explanation of formulae and symbols</li> <li>☐ Appropriate models, conformity of dimensions</li> <li>☐ Slides, on-site experiments, audio, video, as appropriate</li> </ul>	Response to the reporter solution  Shows the strong and we of the report  Finds shortcomings or enthe report  Relevance of the question  Contribution to the discuss	ak points fors in	<ul> <li>□ Provides a thorough review of report and discussion</li> <li>□ Expresses own opinion about topics presented or discussed</li> <li>□ Relevance of questions to both the reporter and the opponent</li> <li>□ Draws attention to points missed by the reporter or the opponent</li> </ul>				
References, proper citations of ideas and input of others  Novelty of the report			This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades — please				

Final Grade: Reporter

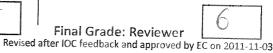
☐ Contribution to the discussion

Final Grade: Opponent



Final Grade: Reviewer

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Fight (Round no.): 2 Room	n: <u>G</u> Stage: <u>1</u>	_ Problem no.: 7
Juror: Nirut Russadee	_ Signature:	

Final Grade: Reviewer

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 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.

<ul> <li>Don't punish missing 'answers' when r</li> </ul>	o questions were posed or not finding shortc	omings if there were none to find.
Rep.: Czeh	Opp.: French 5	<b>Rev.:</b> UK 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	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	☐ Praws 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
☐ Novelty of the report		This sheet will be open and fight assistant, so we can scan it and archive your partial grades — please
Contribution to the discussion		do not bend
Final Grade: Reporter	Final Grade: Opponent	Final Grade: Reviewer

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Fight (Round no.): _	L Room:	<u> </u>	Stage:	Problem no.: _	(7
Juror: <u>HWDA</u>	TUT	Signature:	· flag	Yuais	

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

# An opposition should show that:

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

### A review should show that:

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

	o questions were posed or not finding shortc	omings if there were none to find.
<b>Rep.:</b> 5	<b>Opp.:</b> 5	<b>Rev.:</b> 5
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	Opponent ±1	Reviewer ±1
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
☐ Structure ☐ Explanation of formulae and	Shows the strong and weak points of the report	Expresses own opinion about topics presented or discussed
symbols  Appropriate models, conformity of dimensions	Finds shortcomings or errors in the report  Relevance of the questions	Relevance of questions to both the reporter and the opponent
Slides, on-site experiments, audio, video, as appropriate	<ul><li>☐ Relevance of the questions</li><li>☐ Contribution to the discussion</li></ul>	Draws attention to points missed 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
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Final Grade: Opponent

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Final Grade: Reviewer

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		<b>5</b>	#	#	8	篇		8	. 7	# 4	7 8				鬱	H	凝	Santa S	, ale
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Fight (Round no.): 2 Room: G Stage: 1 Problem no.: 7
Juror: Ly - MARTCHE NEW Signature:
and principles of the problem • an explanation of the observed phenomena • an experimental technique to gather and record data (or demonstrate the phenomena if if findings to draw suitable conclusions • an attempt to communicate difficult or er
g of the presented concepts, theories and principles • the opponent understood the ciqued the experimental technique used and questioned the validity of the data • the december of the report

• a presentation of the appropriate concepts, theories application of appropriate mathematics • reasonable ex appropriate) • linking of theoretical and experimental complex ideas in an effective and understandable manne

# An opposition should show that:

• the opponent challenged the reporter's understanding appropriate mathematics presented • the opponent crit opponent appreciated and highlighted the strengths and

# A review should show that:

A report should include:

• 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

<ul> <li>The reporter, opponent and reviewer</li> <li>Consider the following suggestions to</li> <li>Select each partial grade from each set</li> </ul>	consists of a partial grade for <i>physics, presen</i> each <i>start with 5 points</i> .  add to or deduct from the initial <i>5 points</i> .  ction and write it in the corresponding box.  no questions were posed or not finding shortc						
Rep.: Czech Pep. 5	Opp.: France 5	Rev.: UK 5					
Physics ±3	Physics ±3	Physics ±3 + 2					
<ul><li>☐ Correct and relevant physics</li><li>☐ Scientific approach</li><li>☐ Validity of conclusions</li><li>☐ Accurate answers</li></ul>	<ul><li>☐ Correct and relevant physics</li><li>☐ Scientific approach</li><li>☐ Validity of conclusions</li><li>☐ Accurate answers</li></ul>	☐ 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	Opponent ±1	Reviewer ±1					
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion					
☐ Structure ☐ Explanation of formulae and symbols	☐ Shows the strong and weak points of the report ☐ Finds shortcomings or errors in	Expresses own opinion about topics presented or discussed					
<ul> <li>Appropriate models, conformity of dimensions</li> </ul>	the report  Relevance of the questions	Relevance of questions to both the reporter and the opponent  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

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



Scoring Guidelii	Fight (Round no.): Roor  Nes  Juror: Ferry Sorre	m: G Stage: Problem no.: 4  Signature: Fory Sag
application of appropriate mathematics • r	ets, theories and principles of the problem • an of the action of the problem • an of the action of the problem • and the action of the problem • and the action of the problem • and the action of the acti	record data (or demonstrate the phenomena if
An opposition should show that: • the opponent challenged the reporter's unappropriate mathematics presented • the opponent appreciated and highlighted the st	nderstanding of the presented concepts, theories pponent critiqued the experimental technique use	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	ctive summary of the performances the reporter sial ones) • the reviewer's personal opinion was in the trivial and demonstrated, where possible, the red by the reporter and the opponent	n evidence (not just superficial observations) .
<ul> <li>The reporter, opponent and reviewer</li> <li>Consider the following suggestions to</li> <li>Select each partial grade from each sec</li> </ul>	consists of a partial grade for <i>physics, presen</i> each <i>start with 5 points</i> .  add to or deduct from the initial <i>5 points</i> .  ction and write it in the corresponding box.  so questions were posed or not finding shortc	
Rep.: France 5	Opp.: UK 5	Rev.: Grech 5
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
eporter ±1	Opponent ±1	Reviewer ±1
J Quality of experimental technique(s)  Structure	Response to the reporter's solution	Provides a thorough review of report and discussion
Explanation of formulae and symbols	Shows the strong and weak points of the report  Finds shortcomings or errors in	Expresses own opinion about topics presented or discussed  Relevance of questions to both the
Appropriate models, conformity of dimensions	the report  Relevance of the questions	reporter and the opponent  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

Final Grade: Reporter Final Grade: Opponent

☐ Novelty of the report

 $\square$  Contribution to the discussion

Final Grade: Reviewer Final Grade: Revised after IOC feedback and approved by EC on 2011-11-03

do not bend

archive your partial grades - please

Scoring Guidelines	ng Guideline	elines!
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Fight (Round no.): 2 Room:	Stage:	2 Pro	oblem no.: 3
Juror: Mathias Their	Signature:		GUC
,	/	/ /	

Final Grade: Reviewer
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:

Final Grade: Reporter

- 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.: France 5	Opp.: <u>UK</u> 5	Rev.: Czech 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								
Presentation ±1 + 1	Presentation ±1 ±0	Presentation ±1 ±0								
Clear and understandable	☐ Clear and understandable	☐ Clear and understandable								
☐ Appropriate manner	☐ Appropriate manner	☐ Appropriate manner								
Overall impression	Overall impression	☐ Overall impression								
Reporter ±1 ± 0	Opponent ±1 ±0	Reviewer ±1 ±0								
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion								
<ul><li>☐ Quality of experimental technique(s)</li><li>☐ Structure</li></ul>	solution  Shows the strong and weak points	Provides a thorough review of report and discussion								
technique(s)  Structure  Explanation of formulae and	Response to the reporter's solution  Shows the strong and weak points of the report	Provides a thorough review of report and discussion								
technique(s)  Structure  Explanation of formulae and symbols  Appropriate models, conformity	solution  Shows the strong and weak points	Provides a thorough review of report and discussion  Expresses own opinion about								
technique(s)  Structure  Explanation of formulae and	solution  Shows the strong and weak points of the report  Finds shortcomings or errors in	Provides a thorough review of report and discussion  Expresses own opinion about topics presented or discussed  Relevance of questions to both the reporter and the opponent								
technique(s)  Structure  Explanation of formulae and symbols  Appropriate models, conformity	solution  Shows the strong and weak points of the report  Finds shortcomings or errors in the report	Provides a thorough review of report and discussion  Expresses own opinion about topics presented or discussed  Relevance of questions to both the reporter and the opponent								
technique(s)  Structure  Explanation of formulae and symbols  Appropriate models, conformity of dimensions  Slides, on-site experiments, audio	solution  Shows the strong and weak points of the report  Finds shortcomings or errors in the report  Relevance of the questions	Provides a thorough review of report and discussion  Expresses own opinion about topics presented or discussed  Relevance of questions to both the reporter and the opponent  Draws attention to points missed by the reporter or the opponent  This sheet will be collected by the								
technique(s)  Structure  Explanation of formulae and symbols  Appropriate models, conformity of dimensions  Slides, on-site experiments, audio, video, as appropriate	solution  Shows the strong and weak points of the report  Finds shortcomings or errors in the report  Relevance of the questions	Provides a thorough review of report and discussion  Expresses own opinion about topics presented or discussed  Relevance of questions to both the reporter and the opponent  Draws attention to points missed by the reporter or the opponent  This sheet will be collected by the								
technique(s)  Structure  Explanation of formulae and symbols  Appropriate models, conformity of dimensions  Slides, on-site experiments, audio, video, as appropriate  References, proper citations of ideas and input of others	solution  Shows the strong and weak points of the report  Finds shortcomings or errors in the report  Relevance of the questions	Provides a thorough review of report and discussion  Expresses own opinion about topics presented or discussed  Relevance of questions to both the reporter and the opponent  Draws attention to points missed by the reporter or the opponent								

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Fight (Round no.): 2 Room:	<u>_</u>	Stage: 2	Problem no.: _	9
Juror: K-240R2	Signature	: <u>t.</u>	4-	

• 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:

Final Grade: Reporter

- 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

<ul> <li>Select each partial grade from each see</li> </ul>	add to or deduct from the initial 5 points.  ction and write it in the corresponding box.  no questions were posed or not finding shortc	omings if there were none to find.
Rep.: FEANCE 5	Opp.: 15	Rev.: <u>CZGC4 R.</u> 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
<ul><li>Quality of experimental technique(s)</li></ul>	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
Appropriate models, conformity of dimensions	Relevance of the questions	
Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	Draws attention to points missed 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 be archive your partial grades — please
Contribution to the discussion		do not bend
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Final Grade: Opponent

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	CO	1	#	E.	屋			I A			Sec.	Ħ	H	H	Ħ	Sec.	4
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Fight (Round no.): 2	Room: 6 Stage: 2 Problem no.: 9
Juror: Nirut Pussadee	Signature: Wif
	1

Final Grade: Reviewer

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 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.

<ul> <li>Don't punish missing 'answers' when n</li> </ul>	o questions were posed or not finding shortco	omings if there were none to find.					
Rep.: France 5	<b>Opp.:</b> UK 5	Rev.: Czech 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					
<ul><li>Quality of experimental technique(s)</li></ul>	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					
Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	Draws attention to points missed by the reporter or the opponent					
References, proper citations of ideas and input of others		This sheet will be collected by the					
☐ Novelty of the report		This sheet will be constant and fight assistant, so we can scan it and archive your partial grades – please					
Contribution to the discussion		do not bend					
Final Grade: Reporter	Final Grade: Opponent	Final Grade: Reviewer					

# Scoring Guide

□ Contribution to the discussion

	Fight (Round no.):	m: Stage: Problem no.:
Scoring Guideling		Signature: His fuccet
application of appropriate mathematics • r	ets, theories and principles of the problem • an easonable experimental technique to gather and experimental findings to draw suitable conclusion dable manner	record data (or demonstrate the phenomena if
An opposition should show that: • the opponent challenged the reporter's unappropriate mathematics presented • the opponent appreciated and highlighted the st	nderstanding of the presented concepts, theories pponent critiqued the experimental technique uso rengths 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	etive summary of the performances the reporter sial ones) • the reviewer's personal opinion was i on-trivial and demonstrated, where possible, the r d by the reporter and the opponent	n evidence (not just superficial observations) a
<ul> <li>The reporter, opponent and reviewer</li> <li>Consider the following suggestions to</li> <li>Select each partial grade from each set</li> </ul>	consists of a partial grade for <i>physics, presen</i> each <i>start with 5 points</i> .  add to or deduct from the initial <i>5 points</i> .  ction and write it in the corresponding box.  to questions were posed or not finding shorte	
Rep.: Frank CC 5	Opp.: 5	Rev.: <u>Creat</u> 3
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	Opponent ±1	Reviewer ±1
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
☐ Structure ☐ Explanation of formulae and	Shows the strong and weak points of the report	Expresses own opinion about topics presented or discussed
symbols	Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent
<ul> <li>□ Appropriate models, conformity of dimensions</li> <li>□ Slides, on-site experiments, audio, video, as appropriate</li> </ul>	Relevance of the questions Contribution to the discussion	Draws attention to points missed by the reporter or the opponent
References, proper citations of ideas and input of others		This sheet will be collected by the
Novelty of the report		This sheet will be earn scan it and fight assistant, so we can scan it and archive your partial grades – please

Final Grade: Reporter

Final Grade: Opponent

Final Grade: Reviewer Revised after IOC feedback and approved by EC on 2011-11-03

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delibition.	Aller Aller	88	躍	16F	S.	40000	(C)	8	THE PERSON NAMED IN	Section 1	M	2	# 2	Water Co	Same

Fight (	Round i	no.): <u>      2                              </u>	Room: _	<u> </u>	Stage:	2	_ Problem no	o.: 9
Juror:	lezn	WARTEN	ENRO !	Signature	e:	A THE STREET	7	

• 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:

Final Grade: Reporter

- 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.

<ul> <li>Select each partial grade from each sec</li> </ul>	each start with 5 points. add to or deduct from the initial 5 points. Ition and write it in the corresponding box. O questions were posed or not finding shortco	omings if there were none to find.				
Rep.: France 5	Opp.:	Rev.: Czech Rep. 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	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				
Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	Draws attention to points missed 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 are archive your partial grades – please				
Contribution to the discussion		do not bend				
		pros.				

Final Grade: Opponent |

<sup>'</sup> Final Grade: Reviewer

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Scoring Guideli	nes	m: 6 Stage: Problem no.: 4
	Juror: fong Song	_ Signature:
application of appropriate mathematics • r	ots, theories and principles of the problem • an a easonable experimental technique to gather and experimental findings to draw suitable conclusion adable manner	record data (or demonstrate the phenomena if
An opposition should show that: • the opponent challenged the reporter's unappropriate mathematics presented • the opponent appreciated and highlighted the statement of the sta	nderstanding of the presented concepts, theories pponent critiqued the experimental technique use	and <i>principles</i> • the opponent understood the ed and questioned the <i>validity</i> of the <i>data</i> • the
A review should show that:  • the reviewer succeeded in giving an object important aspects (especially the controver.)	ctive summary of the performances the reporter sial ones) • the reviewer's personal opinion was in on-trivial and demonstrated, where possible, the r	n evidence (not just superficial observations) *
The <i>reporter</i> , <i>opponent</i> and <i>reviewer</i> Consider the following <i>suggestions</i> to Select each partial grade from each se	consists of a partial grade for <i>physics</i> , <i>presen</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.  no questions were posed or not finding shortc	
Rep.: 5	Opp.: 5	Rev.: 07 676 5
Physics ±3	Physics ±3	Physics ±3
<ul><li>☐ Correct and relevant physics</li><li>☐ Scientific approach</li><li>☐ Validity of conclusions</li><li>☐ Accurate answers</li></ul>	<ul> <li>☐ Correct and relevant physics</li> <li>☐ Scientific approach</li> <li>☐ Validity of conclusions</li> <li>☐ Accurate answers</li> </ul>	<ul><li>☐ Correct and relevant physics</li><li>☐ Scientific approach</li><li>☐ Validity of conclusions</li><li>☐ Accurate answers</li></ul>
resentation ±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
eporter ±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
Explanation of formulae and symbols	Finds shortcomings or errors in	topics presented or discussed  Relevance of questions to both the
Appropriate models, conformity of dimensions	the report  Relevance of the questions	reporter and the opponent  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,

Final Grade: Reporter Final Grade: Opponent

 $\square$  Novelty of the report

☐ Contribution to the discussion

Final Grade: Reviewer

do not bend

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

archive your partial grades - please

C		Fight (Round no.): Room: Stage: Prob	ole
Scoring	Guidelines	Juror: Matthias Theis Signature:	1/
			Same

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

# An opposition should show that:

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

# A review should show that:

- the reviewer succeeded in giving an *objective summary* of the performances the *reporter* and *opponent* the reviewer appreciated the *important aspects* (especially the *controversial* ones) the reviewer's *personal opinion* was in evidence (*not* just *superficial observations*) such personal opinions were *informative*, *non-trivial* and demonstrated, where possible, the reviewer's *understanding* of *concepts*, *theories*, *principles* and *appropriate mathematics* used by the reporter and the opponent
- The grade for each of the three teams consists of a partial grade for *physics, presentation* and for their *specific role*.
- The reporter, opponent and reviewer each start with 5 points.
- Consider the following suggestions to add to or deduct from the initial 5 points

<ul> <li>Select each partial grade from each see</li> <li>Don't punish missing 'answers' when r</li> </ul>	ction and <i>write it</i> in the corresponding box. no questions were posed or not finding shortc	omings if there were none to find.
Rep.:	Opp.: Gel Rep 5	Rev.: 5
Physics ±3 +0,5	Physics ±3 +0.5	Physics ±3
<ul> <li>☐ Correct and relevant physics</li> <li>☐ Scientific approach</li> <li>☐ Validity of conclusions</li> <li>☐ Accurate answers</li> </ul>	<ul><li>☐ Correct and relevant physics</li><li>☐ Scientific approach</li><li>☐ Validity of conclusions</li><li>☐ Accurate answers</li></ul>	☐ Correct and relevant physics ☐ Scientific approach ☐ Validity of conclusions ☐ Accurate answers
Presentation ±1	Presentation ±1	Presentation ±1
Reporter ±1 ±0	Opponent ±1 +0,5	Reviewer ±1 ±0
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
<ul><li>Structure</li><li>Explanation of formulae and symbols</li></ul>	☐ Shows the strong and weak points of the report ☐ Finds shortcomings or errors in	Expresses own opinion about topics presented or discussed
Appropriate models, conformity of dimensions	the report  Relevance of the questions	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	☐ Contribution to the discussion	by the reporter or the opponent
References, proper citations of ideas and input of others  Novelty of the report		This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please
Contribution to the discussion		do not bend

Final Grade: Reviewer Revised after IOC feedback and approved by EC on 2011-11-03

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						Bush		-		400- 00	-	200	100		28	- Managery	diffin.

Scoring Guidel	Fight (Round no.): 2 Fight (Ro	Room: Stage: Problem no.: 7
application of appropriate mathematics	<ul> <li>reasonable experimental technique to gather</li> <li>d experimental findings to draw suitable cond</li> </ul>	an <i>explanation</i> of the <i>observed phenomena</i> • an and <i>record data</i> (or <i>demonstrate</i> the <i>phenomena</i> if <i>dusions</i> • an attempt to communicate <i>difficult</i> or
An opposition should show that • the opponent challenged the reporter's appropriate mathematics presented • the opponent appreciated and highlighted the	understanding of the presented concepts, theo	ries and principles • the opponent understood the used and questioned the validity of the data • the
important aspects (especially the controv	ersial ones) • the reviewer's personal opinion w non-trivial and demonstrated, where possible, t	rter and opponent • the reviewer appreciated the ras in evidence (not just superficial observations) • the reviewer's understanding of concepts, theories,
<ul> <li>The reporter, opponent and reviewe</li> <li>Consider the following suggestions t</li> <li>Select each partial grade from each s</li> </ul>	ns consists of a partial grade for <i>physics, pre</i> each start with 5 points. to add to or deduct from the initial 5 points. section and write it in the corresponding both no questions were posed or not finding shape.	х.
Rep.: 16	Opp.: Cle Ctr R 5	Rev.: Fe4xCE   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

# Presentation ±1

☐ Clear and understandable ☐ Appropriate manner

☐ Overall impression

# Reporter ±1

☐ Quality of experimental technique(s)

☐ Structure

☐ Explanation of formulae and symbols

Appropriate models, conformity of dimensions

Slides, on-site experiments, audio. video, as appropriate

References, proper citations of ideas and input of others

☐ Novelty of the report

Final Grade: Reporter

☐ Contribution to the discussion

# Presentation ±1

☐ Clear and understandable

☐ Appropriate manner

☐ Overall impression

# Opponent ±1

☐ Response to the reporter's solution

Shows the strong and weak points of the report

Finds shortcomings or errors in the report

☐ Relevance of the questions

☐ Contribution to the discussion

☐ Clear and understandable

☐ Appropriate manner

☐ Overall impression

# Reviewer ±1

Provides a thorough review of report and discussion

Expresses own opinion about topics presented or discussed

Relevance of questions to both the reporter and the opponent

Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades - please

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Final Grade: Opponent

Final Grade: Reviewer

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Fight (Round no.): Room:	Stage: 3 Problem no.: 4
Juror: Nimt Pussade	Signature: Wif

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

### An opposition should show that:

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

# A review should show that:

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

<ul> <li>The reporter, opponent and reviewer of</li> </ul>		tation and for their specific role.				
<ul> <li>Select each partial grade from each sed</li> </ul>	add to or deduct from the initial 5 points. ction and write it in the corresponding box.					
<ul> <li>Don't punish missing 'answers' when n</li> </ul>	o questions were posed or not finding shortco	omings if there were none to find.				
<b>Rep.:</b> 5	Opp.: Ctech 5	Rev.: France 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				
<ul><li>Quality of experimental technique(s)</li></ul>	Response to the reporter's solution	Provides a thorough review of report and discussion				
☐ Structure	☐ Shows the strong and weak points					
☐ Explanation of formulae and	of the report	Expresses own opinion about 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				
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 contain assistant, so we contain assistant, so we contain assistant assistant assistant assistant assistant assistant assistant assistant, so we contain assistant, so we contain assistant, so we contain assistant, so we contain assistant assistant, so we contain assistant assistant, so we contain assistant assis				
☐ Contribution to the discussion		do not bend				
Final Grade: Reporter	Final Grade: Opponent					

Final Grade: Reviewer

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						Sand P									-	_			-

Final Grade: Reporter

Cooking Cuidali	Fight (Round no.): Roor	m: Stage: Problem no.:					
Scoring Guideli	Juror: Juda July	_ Signature: <u>file for the file</u>					
application of appropriate mathematics • r	ets, theories and principles of the problem • an eleasonable experimental technique to gather and experimental findings to draw suitable conclusions and the manner	record data (or demonstrate the phenomena if					
An opposition should show that:  • the opponent challenged the reporter's u	nderstanding of the presented concepts, theories pponent critiqued the experimental technique use	and <i>principles</i> • the opponent understood the ed and questioned the <i>validity</i> of the <i>data</i> • the					
A review should show that:  • the reviewer succeeded in giving an object important aspects (especially the controver.)	ctive summary of the performances the reporter sial ones) • the reviewer's personal opinion was in on-trivial and demonstrated, where possible, the re	n evidence (not just superficial observations)					
<ul> <li>The reporter, opponent and reviewer</li> <li>Consider the following suggestions to</li> <li>Select each partial grade from each set</li> </ul>	consists of a partial grade for <i>physics, presen</i> t each <i>start with 5 points.</i> <i>add</i> to or <i>deduct</i> from the initial <i>5 points</i> . ction and <i>write it</i> in the corresponding box. no questions were posed or not finding shortc						
Rep.:	Opp.: 15	Rev.: + radice 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					
<ul><li>☐ Structure</li><li>☐ Explanation of formulae and</li></ul>	Shows the strong and weak points of the report	Expresses own opinion about topics presented or discussed					
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					

This sheet will be collected by the References, proper citations of ideas and input of others fight assistant, so we can scan it and archive your partial grades - please ☐ Novelty of the report ☐ Contribution to the discussion

do not bend

Final Grade: Opponent

Final Grade: Reviewer

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



# Scoring Guidelines

Fight (Round	I no.): Room:G Stage:3 Problem no.: 4
Juror: <u>lly</u> o	Ino.): 2 Room: G Stage: 3 Problem no.: 4  MARTCHENIC Signature:
xperimental tec	of the problem • an <i>explanation</i> of the <i>observed phenomena</i> • an chnique to <i>gather</i> and <i>record data</i> (or <i>demonstrate</i> the <i>phenomena</i> if raw <i>suitable conclusions</i> • an attempt to communicate <i>difficult</i> or
$oldsymbol{g}$ of the present	ted <i>concepts, theories</i> and <i>principles</i> • the opponent understood the <i>rimental technique</i> used and questioned the <i>validity</i> of the <i>data</i> • the
tiqued the exper I weaknesses of	the report

• a presentation of the appropriate concepts, theories application of appropriate mathematics • reasonable ex appropriate) • linking of theoretical and experimenta complex ideas in an effective and understandable mann

## An opposition should show that:

• the opponent challenged the reporter's understanding appropriate mathematics presented • the opponent crit opponent appreciated and highlighted the strengths and

### A review should show that:

A report should include:

• the reviewer succeeded in giving an objective summo important aspects (especially the controversial ones) • 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

<ul> <li>The reporter, opponent and reviewer expensions</li> <li>Consider the following suggestions to expensions</li> <li>Select each partial grade from each second</li> </ul>	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 shortco					
Rep.:	Opp.: Czeeh kep. 5	Rev.: France 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				
<ul><li>Quality of experimental technique(s)</li></ul>	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					
Slides, on-site experiments, audio, video, as appropriate	Contribution to the discussion	Draws attention to points missed 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 are archive your partial grades – please				
Contribution to the discussion		do not bend				
Final Grade: Reporter	Final Grade: Opponent Revised a	Final Grade: Reviewer fter IOC feedback and approved by EC on 2011-11-03				