	Fight (Round no.): 5 Room	n: H Stage: Problem no.: 7
Scoring Guidelin	1es Juror: Q. JENNINGS	The state of the s
	Julot.	Signature: GONOMAN
A report should include:		
• a presentation of the appropriate conceptapplication of appropriate mathematics • re	ts, theories and principles of the problem • an exaconable experimental technique to gather and in 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 un appropriate mathematics presented • the op opponent appreciated and highlighted the st.	derstanding of the presented concepts, theories oponent critiqued the experimental technique use rengths and weaknesses of the report	and <i>principles</i> • the opponent understood the d and questioned the <i>validity</i> of the <i>data</i> • the
A review should show that:		
important aspects (especially the controvers	tive summary of the performances the reporter ial ones) • the reviewer's personal opinion was in n-trivial and demonstrated, where possible, the red by the reporter and the opponent	evidence (not just superficial observations) •
• The grade for each of the three teams	consists of a partial grade for <i>physics, presen</i> t	tation and for their specific role.
<ul> <li>The reporter, opponent and reviewer</li> <li>Consider the following suggestions to</li> </ul>	•	
	add to or deduct from the initial 5 points. etion and write it in the corresponding box.	
	o questions were posed or not finding shortco	omings if there were none to find.
Rep.: Brazil 5	Opp.: Slovakia 5	Rev.: Netherlands 5
Physics ±3	Physica 42	Physics +3
Correct and relevant physics	Physics ±3	11173103 23
Scientific approach	☐ Correct and relevant physics ☐ Scientific approach	☐ Correct and relevant physics ☐ 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 + ☐ Explanation of formulae and	Shows the strong and weak points of the report	Expresses own opinion about topics presented or discussed
symbols - E	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 $\Theta$	☐ 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 O		archive your partial grades
Contribution to the discussion		do not bend
Final Grade: Reporter	Final Grade: Opponent Revised	Final Grade: Reviewer 2 after IOC feedback and approved by EC on 2011-11-03

Caarina		Fight (Round no.): Roo
Scoring	Guidelines	luror: G/RW/D)

Room: H Stage: 1 Problem no.:

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

Α	rer	ort	should	in	clude:
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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*.
- Select each partial grade from each section and write it in the corresponding box.
- Don't nunish missing 'answers' when no questions were posed or not finding chartcomings if there

boll c punish missing answers when h	o questions were posed or not imaing shorter	omings it there were none to find.
Rep.: Roburrac 5	Opp.: Sorkova 5	Rev.: (200m) 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 ⑦	☐ Accurate answers F	☐ Accurate answers
Presentation ±1	Presentation ±1	Presentation ±1
☐ Clear and understandable +	$\Box$ Clear and understandable $\pm$	☐ 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 †	by the reporter or the opponent $arphi$
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 fight assistant, so we are please archive your partial grades – please
☐ Contribution to the discussion <i>⑤</i>		do not bend
Final Grade: Reporter	Final Grade: Opponent	Final Grade: Reviewer

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Scoring Guideline	ng Guideline.	S
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Fight (Round no.): 5 Room: H Stage: Problem no.: 7 Juror: KATHRYN ZEACAM Signature: Keell

### 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:

	important aspects (especially the controvers	tive summary of the performances the reporter sial ones) • the reviewer's personal opinion was in n-trivial and demonstrated, where possible, the red by the reporter and the opponent	revidence (not just superficial observations) .
	<ul> <li>The reporter, opponent and reviewer of the Consider the following suggestions to select each partial grade from each second</li> </ul>	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.  o questions were posed or not finding shortc	
FOL	Rep.: hain  ed comparison of theory 15  which motion not convincing  Physics 13 clear	Opp.: Kamila reed to ergage with 5 his theory Physics ±3	Rev.: Glens  Need to engage and  Physics ±3 Control  Physics ±3 Control
	Correct and relevant physics  Scientific approach  Validity of conclusions  Accurate answers	☐ Validity of conclusions	☐ Correct and relevant physics ☐ Scientific approach ☐ Validity of conclusions
<b>\</b> 0	Presentation ±1 Lested. + My Clear and understandable	☐ Accurate answers  Presentation ±1 ☐ Clear and understandable	Presentation ±1
	Appropriate manner	Appropriate manner	Description Clear and understandable don't Appropriate manner have empt
	Overall impression	☐ Overall impression	Overall impression slides
	Reporter ±1 + 12	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	Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent
	of dimensions  Slides, on-site experiments, audio, video, as appropriate  References, proper citations of ideas and input of others	Relevance of the questions  Contribution to the discussion  good questions but don't  hap on about a smy a agect	Draws attention to points missed by the reporter or the opponent  USC YOUR GIVES FOR THE (  This sheet will be collected by the fight assistant, so we can scan it and fight assistant.
	Novelty of the report	wasted much him	fight assistant, so we con- archive your partial grades – please

Final Grade: Reporter

Contribution to the discussion

Final Grade: Opponent

Final Grade: Reviewer

do not bend

Sco	ring	Gu	ide	lines
	All the second			

Scoring Guidelines Juron	(Round no.): 5 Room: H Stage: 2 Problem no.: 7  : Ochmar MARTI Signature: Olluman Mark
application of appropriate mathematics • reasonable experime	rinciples of the problem • an explanation of the observed phenomena • an ental technique to gather and record data (or demonstrate the phenomena if ags to draw suitable conclusions • an attempt to communicate difficult or
An opposition should show that:  • the opponent challenged the reporter's understanding of the appropriate mathematics presented • the opponent critiqued to opponent appreciated and highlighted the strengths and weakness.	e presented <i>concepts, theories</i> and <i>principles</i> • the opponent understood the the <i>experimental technique</i> used and questioned the <i>validity</i> of the <i>data</i> • the <i>nesses</i> of the report
important aspects (especially the controversial ones) • the revi	he performances the <i>reporter</i> and <i>opponent</i> • the reviewer appreciated the iewer's <i>personal opinion</i> was in evidence ( <i>not</i> just <i>superficial observations</i> ) • instrated, where possible, the reviewer's <i>understanding</i> of <i>concepts</i> , <i>theories</i> , and the opponent
The grade for each of the three teams consists of a parti The <i>reporter</i> , <i>opponent</i> and <i>reviewer</i> each <i>start with 5</i> Consider the following <i>suggestions</i> to <i>add</i> to or <i>deduct</i> Select each partial grade from each section and <i>write it</i>	from the initial <b>5 points</b> .

- The grade for each of the three teams of
- The reporter, opponent and reviewer e

<ul> <li>Consider the following suggestions to add to or deduct from the initial 5 points.</li> <li>Select each partial grade from each section and write it in the corresponding box.</li> <li>Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.</li> </ul>							
Rep.: Brazil 5	Opp.: Slovakia 5	Rev.: Netherlands 5					
Physics ±3	Physics $\pm 3$ $\boxed{+1\frac{1}{\xi}}$	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 $\pm 1$ $+\frac{1}{2}$	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					
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, 50 the same archive your partial grades — please					
☐ Contribution to the discussion		do not bend					
Final Grade: Reporter	Final Grade: Opponent Revised	Final Grade: Reviewer  fiter IOC feedback and approved by EC on 2011-11-03					

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Fight (Round no.):	m: <del>/-</del> Stage:	:
Juror: Olog Inisheug	Signature:	CRE

• 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. Odd 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.: BRUZI 5	Opp.: Slovakia 5	Rev.: Siovetta 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 + 0,5	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	☐ Finds shortcomings or errors in the report	Relevance of questions to both the
<ul> <li>Appropriate models, conformity of dimensions</li> </ul>	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, so we see archive your partial grades – please
☐ Contribution to the discussion		do not bend
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Final Grade: Opponent

Coovino	Cuidalina	Fight (Rou	nd no.):		Room:		Stage:
Scoring	Guidelines	Juror: T	u c	Chengh	on	Signature	. T

ight (Round no.):	Room:	S1	tage:	Problem no.:
uror: TU C	henghou	Signature:	Ta	chenghou

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.

<ul> <li>Select each partial grade from each sec</li> </ul>	add to or deduct from the initial 5 points. ction and write it in the corresponding box. o questions were posed or not finding shortco	omings if there were none to find.
Rep.: Brazil 5	Opp.: Slovakia 5	Rev.: Ne ther lands 5
Physics ±3  Correct and relevant physics	Physics ±3	Physics ±3
Scientific approach	☐ Correct and relevant physics☐ Scientific approach	Correct and relevant physics
☐ Validity of conclusions	☐ Validity of conclusions	Scientific approach
☐ Accurate answers	☐ Accurate answers	☐ Validity of conclusions☐ Accurate answers
	The recent at a re	Accurate answers
Presentation ±1	Presentation ±1 +as	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 - o · 5	Opponent ±1 to-5	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 by the reporter or the opponent
Slides, on-site experiments, audio, video, as appropriate	$\square$ 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 con archive your partial grades – please
Contribution to the discussion		do not bend
Final Grade: Reporter	Final Grade: Opponent	Final Grade: Reviewer

	Fight (Round no.): 5 Roon	n: H Stage: 2 Problem no.: 1			
Scoring Guideling	1es Juror: G. JENNINGS	Signature: 4 Signature:			
application of appropriate mathematics • re	ts, theories and principles of the problem • an easonable experimental technique to gather and experimental findings to draw suitable conclusionable manner	record data (or demonstrate the phenomena if			
An opposition should show that: • the opponent challenged the reporter's un appropriate mathematics presented • the opponent appreciated and highlighted the str	nderstanding of the presented concepts, theories opponent 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:					
important aspects (especially the controvers	tive summary of the performances the reporter sial ones) • the reviewer's personal opinion was in in-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 expensions</li> <li>Consider the following suggestions to a select each partial grade from each second pon't punish missing 'answers' when not a second pon't punish missing 'answers' when not a second pon't punish missing 'answers' when not a second ponent and reviewer expensions.</li> </ul>	consists of a partial grade for <i>physics, 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.  to questions were posed or not finding shortc				
Rep.: Slovakia 5	Opp.: Nethelands 5	Rev.: Brazil 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			
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 ☐ 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	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		fight assistant, so we do archive your partial grades – please do not bend			
Contribution to the discussion  Final Grade: Reporter	Final Grade: Opponent Revised	Final Grade: Reviewer after IOC feedback and approved by EC on 2011-11-03			

	•	
	Fight (Round no.): 5 Room	n:H Stage: Problem no.:12
Scoring Guidelin	Juror: GIRWID?	
application of appropriate mathematics • re	is, theories and principles of the problem • an e hasonable experimental technique to gather and r experimental findings to draw suitable conclusion In 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 street.	derstanding of the presented concepts, theories a oponent critiqued the experimental technique use rengths and weaknesses of the report	and <i>principles</i> • the opponent understood the dand questioned the <i>validity</i> of the <i>data</i> • the
important aspects (especially the controvers	tive summary of the performances the reporter a ial ones) • the reviewer's personal opinion was in n-trivial and demonstrated, where possible, the re d by the reporter and the opponent	evidence (not just superficial observations) •
<ul> <li>The reporter, opponent and reviewer e</li> <li>Consider the following suggestions to e</li> <li>Select each partial grade from each sec</li> </ul>	consists of a partial grade for <i>physics, present</i> each <i>start with 5 points</i> .  and to or <i>deduct</i> from the initial <i>5 points</i> .  Ition and <i>write it</i> in the corresponding box.  To questions were posed or not finding shorted with a discontinuous control of the corresponding shorted by the corresponding sho	
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 0 ☐ Clear and understandable → Appropriate manner ○	Presentation ±1  ☐ Clear and understandable ○ ☐ Appropriate manner	Presentation ±1  Clear and understandable t
Overall impression  Reporter ±1	Opponent ±1	☐ Appropriate manner
Quality of experimental + technique(s)	Response to the reporter's – solution	Provides a thorough review of +
Structure	☐ Shows the strong and weak points	report and discussion  Expresses own opinion about
Explanation of formulae and symbols	of the report  Finds shortcomings or errors in	topics presented or discussed  Relevance of questions to both the
☐ Appropriate models, conformity	the report	reporter and the opponent
of dimensions   Slides, on-site experiments, audio, video, as appropriate	☐ Relevance of the questions ② ☐ 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 con archive your partial grades – please

 $\square$  Contribution to the discussion

Final Grade: Reporter

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

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Fight (Round no.): 5 Room: H Stage: 2 Problem no.: 2 Juror: Kathryn Zealard Signature: Kleelly

# 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 st	rengths and weaknesses of the report	
important aspects (especially the controvers	ctive summary of the performances the reporter sial ones) • the reviewer's personal opinion was in an-trivial and demonstrated, where possible, the red by the reporter and the opponent	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 ser</li> </ul>	consists of a partial grade for <i>physics</i> , <i>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.  no questions were posed or not finding shortco	
Rep.: Marco ruely excellent 5 Physics ±3	Opp.: Maarten  need to engage  more  Physics ±3  - 1½	Rev.: Barbara 5 misrepresented presentation 5 re. shape, day Physics ±3 "no tlear 1 1
Correct and relevant physics Scientific approach Validity of conclusions Accurate answers	Correct and relevant physics  Scientific approach Validity of conclusions Accurate answers	Correct and relevant physics of Scientific approach  Validity of conclusions  Accurate answers
Presentation ±1  ☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression	Presentation ±1  Clear and understandable  Appropriate manner too short  Overall impression not detailed	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
Structure  Explanation of formulae and symbols  Appropriate models, conformity	Shows the strong and weak points of the report need to be more  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 ideas and input of others	Relevance of the questions  Contribution to the discussion  good on our fiction  good on make-jal	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 fight assistant, so we can scan it and
Novelty of the report  Contribution to the discussion	good or direction	do not bend
Final Grade: Reporter	Final Grade: Opponent	Final Grade: Reviewer

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Fight (Round no.): _	<u>    5                                </u>	Stag	ge: 2	Problem no.	. 12
Juror: Othmar	MARTI	Signature:	Od	luna	Mark

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 section and write it in the corresponding box.</li> <li>Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.</li> </ul>								
Rep.: Slovaleia 5	Opp.: Netherlands 5	Rev.: Brazil 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 + 2	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						
☐ 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	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

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



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Rep.: Slovakia

Correct and relevant physics

☐ Clear and understandable

—☐ References, proper citations of ideas and input of others

☐ Contribution to the discussion

→□ Scientific approach

± ☐ Validity of conclusions

☐ Accurate answers

Presentation ±1

☐ Appropriate manner

☐ Overall impression

Reporter ±1

☐ Structure

Physics ±3

	and the second s	n: Stage: Problem no.:
Scoring Guideli	nes  Fight (Round no.): Roor  Juror: Olga Inicheva	1: Stage: Problem no.:
application of appropriate mathematics •	ots, theories and principles of the problem • an a reasonable experimental technique to gather and experimental findings to draw suitable conclusion and able manner	record data (or demonstrate the phenomena if
An opposition should show that • the opponent <i>challenged</i> the <i>reporter's u</i> appropriate mathematics presented • the opponent appreciated and highlighted the s	inderstanding of the presented concepts, theories apponent critiqued the experimental technique use	and <i>principles</i> • the opponent understood the d and questioned the <i>validity</i> of the <i>data</i> • the
A review should show that:  • the reviewer succeeded in giving an objeimportant aspects (especially the controver)	ctive summary of the performances the reporter rsial ones) • the reviewer's personal opinion was in on-trivial and demonstrated, where possible, the r	n evidence (not just superficial observations) •
The reporter, opponent and reviewer Consider the following suggestions to Select each partial grade from each se Don't punish missing 'answers' when	add to or deduct from the initial 5 points. ection and write it in the corresponding box. no questions were posed or not finding shortc	omings if there were none to find.
Rep.: Slovakia 5	Opp.: Netherland 5	Rev.: <u>Brazi</u> 5
Chysics ±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
resentation ±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
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	the report	reporter and the opponent
of dimensions  Slides, on-site experiments, audio, video, as appropriate	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 fight assistant, so we can scan it and
Novelty of the report		fight assistant, so we are fight assistant, so we are fight assistant, so we are fight assistant as a fight assistant as a fight assistant, so we are fight assistant as a fight assistant as a fight assistant as a fight assistant as a fight as

Final Grade: Reporter

─☐ Novelty of the report

Final Grade: Opponent

Final Grade: Reviewer

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Scoring Guideli		m: 17 Stage: 2 Problem no.: 12			
Jeonny Galacii	Juror: The Chenghon	_ Signature: Ta chenghor			
A report should include:	V				
application of appropriate mathematics •	ots, theories and principles of the problem • an a reasonable experimental technique to gather and experimental findings to draw suitable conclusion andable manner	record data (or demonstrate the phenomena if			
An opposition should show that • the opponent challenged the reporter's u appropriate mathematics presented • the co opponent appreciated and highlighted the s	anderstanding of the presented concepts, theories apponent 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 controver	ctive summary of the performances the reporter resial ones) • the reviewer's personal opinion was in con-trivial and demonstrated, where possible, the red by the reporter and the opponent	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	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				
Rep.: Slovakia 5	Opp.: Netherlands 5	Rev.: Brazif 5			
Physics ±3 +01	Physics ±3	Physics ±3 +0.5			
☐ Correct and relevant physics☐ Scientific approach	☐ Correct and relevant physics ☐ Scientific approach	☐ Correct and relevant physics			
☐ Validity of conclusions	☐ Validity of conclusions	☐ Scientific approach ☐ Validity of conclusions			
Accurate answers	☐ Accurate answers	☐ Accurate answers			
resentation ±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			
eporter ±1 -o\	Opponent ±1	Reviewer ±1 to.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			
Explanation of formulae and symbols	Finds shortcomings or errors in the report	topics presented or discussed  Relevance of questions to both the			
Appropriate models, conformity of dimensions	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			

archive your partial grades - please The hery do not bend

Final Grade: Reviewer

Final Grade: Opponent

References, proper citations of ideas and input of others

 $\square$  Contribution to the discussion

☐ Novelty of the report

Final Grade: Reporter

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

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Rep.: Methodands

Scoring Guidelin	Fight (Round no.): 5 Room  Juror: G. JENNINGS	7 1 7			
application of appropriate mathematics • re	s, theories and principles of the problem • an e asonable experimental technique to gather and r perimental findings to draw suitable conclusio lable manner	ecord data (or demonstrate the phenomena if			
An opposition should show that: • the opponent <i>challenged</i> the <i>reporter's und</i> **appropriate mathematics presented • the opponent appreciated and highlighted the street.	derstanding of the presented concepts, theories a ponent critiqued the experimental technique use engths and weaknesses of the report	and <i>principles</i> • the opponent understood the data • the			
important aspects (especially the controversi	ive summary of the performances the reporter and ones) • the reviewer's personal opinion was in a trivial and demonstrated, where possible, the reby the reporter and the opponent	evidence (not just superficial observations) •			
The <i>reporter, opponent</i> and <i>reviewer</i> e Consider the following <i>suggestions</i> to a Select each partial grade from each sect	consists of a partial grade for <i>physics, present</i> ach <i>start with 5 points</i> .  Indeed to or <i>deduct</i> from the initial <i>5 points</i> .  It is and write it in the corresponding box.  In questions were posed or not finding shortco				
Rep.: Methodands 5  Physics ±3	Opp.: Brazil 5  Physics ±3	Rev.: Stovakia 5  Physics ±3			
Correct and relevant physics	· · · · · · · · · · · · · · · · · · ·				
Scientific approach	☐ Correct and relevant physics☐ Scientific approach	Correct and relevant physics			
Validity of conclusions	☐ Validity of conclusions	☐ Scientific approach ☐ Validity of conclusions			
Accurate answers	Accurate answers	Accurate answers			
resentation $\pm 1$ $+ \frac{1}{2}$	Presentation ±1 + ½	Presentation ±1			

Pł	nysics ±3	-12
	Correct and relevant phy	ysics
	Scientific approach	
	Validity of conclusions	
	Accurate answers	
Pr	esentation ±1	+ 5
	Clear and understandable	le
	Appropriate manner	
	Overall impression	
Re	porter ±1	M
	Quality of experimental technique(s)	
	Structure	
	Explanation of formulae symbols	and
	Appropriate models, con of dimensions	formity
	Slides, on-site experimen video, as appropriate	ts, audio,

☐ References, proper citations of ideas and input of others

☐ Contribution to the discussion

☐ Novelty of the report

Final Grade: Reporter

	Correct and relevant physics	
	Scientific approach	
	Validity of conclusions	
	Accurate answers	-
Pr	esentation ±1 + え	
	Clear and understandable	
	Appropriate manner	
	Overall impression	
Οp	pponent ±1	Total Control of the
	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	

		nysics ±3  Correct and relevant phoscientific approach  Validity of conclusions	ysics
	Pr	Accurate answers esentation ±1	+5
		Clear and understandab Appropriate manner Overall impression	e
	Re	viewer ±1	+ {
		Provides a thorough revi report and discussion	ew of
		Expresses own opinion a topics presented or discu	
***************************************		Relevance of questions to reporter and the oppone	o both the
		Draws attention to point by the reporter or the op	s missed ponent
AMANA PARTIE SANTA PARTIE PARTIE SANTA PARTIE PARTIE SANTA PARTIE PARTI		This sheet will be collected fight assistant, so we can so archive your partial grades	**

Final Grade: Opponent

Final Grade: Reviewer

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Fight (Round no.): 5	Room: _	<u>H</u>	Stage:	3_	Problem no.: _	1
Juror: GIRWIDZ	S	ignature	¥*	R- 4	kow of	

Α	report	should	include:

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

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

#### A review should show that:

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

<ul> <li>Select each partial grade from each sec</li> </ul>	ndd to or deduct from the initial 5 points. tion and write it in the corresponding box. O questions were posed or not finding shortco	omings if there were none to find.
Rep.: Vethelandy 5	Opp.: Brasil 5	Rev.: Yozakia 5
Physics ±3	Physics ±3	Physics ±3
$\square$ 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 <sup>†</sup>
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 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
☐ 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	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 con archive your partial grades – please
☐ Contribution to the discussion		do not bend
	Au	

Final Grade: Reporter

Final Grade: Opponent

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

		Fight (Round no.):	S Room	: H Stage: 3 Prob	elem no.: 1
Scoring Gui	deline	and the same		Signature: Kore	
application of appropriate math	iate <i>concepts, t</i> ematics • reasc etical and expe	onable <b>experimental technique</b> to e <b>rimental findings</b> to draw <i>suito</i>	o <i>gather</i> and <i>re</i>	explanation of the observed phen ecord data (or demonstrate the p as • an attempt to communicate	henomena if
An opposition should sh • the opponent challenged the r appropriate mathematics preser opponent appreciated and highlight	eporter's under	nent <i>critiqued</i> the <i>experimental</i>	t <b>echnique</b> used	and <i>principles</i> • the opponent und drand questioned the <i>validity</i> of th	derstood the
important aspects (especially the	ng an objective e controversial ermative, non-ti	ones) • the reviewer's <i>personal a</i> rivial and demonstrated, where p	<i>opinion</i> was in	ind opponent • the reviewer app evidence (not just superficial obs viewer's understanding of concep	servations) •
<ul> <li>The reporter, opponent and</li> <li>Consider the following sugg</li> <li>Select each partial grade fro</li> </ul>	l <i>reviewer</i> eac estions to add m each sectio	h s <i>tart with 5 points.</i> If to or <i>deduct</i> from the initial . In and <i>write it</i> in the correspol	<i>5 points</i> . nding box.	ation and for their specific role	
Rep.: Andrej med experiments No comparison!! Physics ±3	5 - 2	Opp.: Liara need to engage more with this theory Physics ±3	5 +2 <sup>1</sup> / <sub>2</sub>	Rev.: Kamila Physics ±3	- 5   14
Correct and relevant phy Scientific approach Validity of conclusions Accurate answers	rsics	Correct and relevant ph Scientific approach Validity of conclusions Accurate answers	ysics	Correct and relevant p  Scientific approach  Validity of conclusions  Accurate answers	
Presentation ±1  ☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression	e E	Presentation ±1  Clear and understandate Appropriate manner for  Overall impression too  a bit overblaim	o short	Presentation ±1  Clear and understanda  Appropriate manner  Overall impression	able
Reporter ±1	1 / 1	Opponent ±1	+/2	Reviewer ±1	162

Quality of experimental technique(s) Excellent

☐ Structure

Explanation of formulae and symbols

Appropriate models, conformity of dimensions

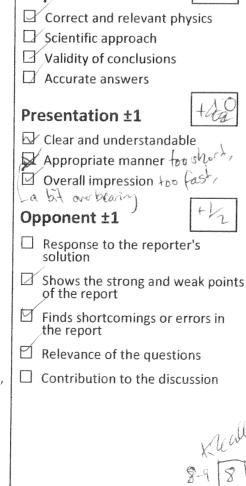
Slides, on-site experiments, audio, video, as appropriate

References, proper citations of ideas and input of others

Novelty of the report

☐ Contribution to the discussion

Final Grade: Reporter



Final Grade: Opponent



- 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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Final Grade: Reviewer

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SC	orina	Guidelines	/
-000-			Juror: (

Fight (Round no.):	5	Room:	<u> </u>	Stage:	<u>3</u>	Problem	no.:	1
Juror: Othmar	MAR	· Andrewson	Signatur	e: /	Mu	mar_	Na	A:

• 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*.

<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 shorted	omings if there were none to find				
Rep.: Netherlands 5	Opp.: Brazil 5	Rev.: Stovakia 5				
Physics ±3 $-1$	Physics ±3 +1	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 $-\frac{4}{2}$	Reviewer $\pm 1$ $7\frac{1}{2}$				
<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	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 reades – please 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				

		Fight (R	ound n	10 J.	5	Poor	n.	Н	Stage:	2 .	Proble	m no.:			
Scoring Guidelin	1es														
<b>3</b>		Juror:	10	<u> </u>	en:	mon	_ S	ignatu	'e:	- va	<u> </u>	enghor			
A report should include:		)	Water & Market Assessment Street		/		***************************************								
• a presentation of the appropriate concept application of appropriate mathematics • re appropriate) • linking of theoretical and e. complex ideas in an effective and understand	easonable <b>e</b> x <b>perimenta</b>	xperimenta Il findings	al techr	nique to	gati	her and i	reco	rd data	(or demo	onstrate t	he <i>phe</i>	nomena if			
An opposition should show that: • the opponent challenged the reporter's unappropriate mathematics presented • the opponent appreciated and highlighted the street	ponent <i>crit</i>	t <b>iqued</b> the d	experin	nental t	echn	<b>heories</b> <b>ique</b> use	and d ar	<i>princip</i> nd quesi	<i>les</i> • the ioned th	opponen e <i>validity</i>	t unde	rstood the data • the			
A review should show that:				<del>d d didens open</del> omente un							•				
<ul> <li>the reviewer succeeded in giving an object important aspects (especially the controvers such personal opinions were informative, no principles and appropriate mathematics used</li> </ul>	<i>ial</i> ones) ● <i>n-trivial</i> and	the review d demonstr	er's <i>pei</i> rated, v	rs <i>onal d</i> where p	pinio	n was ir	n evi	idence (	not just s	superficia	l obser	vations) •			
<ul> <li>The grade for each of the three teams</li> <li>The reporter, opponent and reviewer</li> <li>Consider the following suggestions to a</li> <li>Select each partial grade from each sec</li> <li>Don't punish missing 'answers' when n</li> </ul>	each <i>start</i> i add to or a stion and w	with 5 poi leduct fro vrite it in t	<i>ints</i> . m the the cor	initial <i>5</i> respon	5 <i>poi</i> nding	nts. box.									
Rep.: Netherlands 5	Opp.	: Bra	211	dan Gunner dan		5	teritoria.	Rev.:	5/6	ovak	Î Q	5			
Physics ±3	Physic	cs ±3			+	0.5	F	hysi	cs ±3			+1			
Correct and relevant physics	☐ Cor	rect and	releva	ant ph	ysics	3		☐ Cor	rect an	d releva	nt phy	ysics			
☐ Scientific approach		entific ap	•					☐ Sci∈	entific a	pproach	ì				
☐ Validity of conclusions	protecting	☐ Validity of conclusions						□ Val							
Accurate answers	LJ Acc	urate ans	swers					☐ Acc	urate a	nswers		general contract of the contra			
Presentation ±1	Prese	ntation	1 ± 1		t	0,2	P	rese	ntatio	n ±1		+05			
Clear and understandable	☐ Clea	ar and un	ndersta	andab	le			Cle	ar and u	understa	ndabl	le			
Appropriate manner	☐ App	☐ Appropriate manner							☐ Appropriate manner						
☐ Overall impression	Ove	erall impr	ession	1				J Ove	rall imp	oression					
Reporter ±1	Орроі	nent ±1	L		.6	)	R	evie	wer±:	1		+0.5			
Quality of experimental technique(s)	Respondence	ponse to ition	the re	eporte	r's			Pro rep	vides a	thoroug discussi	h revi on	ew of			
☐ Structure	☐ Sho	ws the st	rong a	and we	eak p	ooints		] Ехр	resses c	wn opir	nion a	bout			
<ul><li>Explanation of formulae and symbols</li></ul>	☐ Find	he report Is shortco		s or er	rors	in		Rele	vance	ented or of quest	ions to	o both the			
Appropriate models, conformity of dimensions	report evance of	the q	uestio	ns		reporter and the opponent  Draws attention to points misse									
Slides, on-site experiments, audio, video, as appropriate		tribution				n	The state of the s	by t	he repo	rter or t	he op	ponent			
References, proper citations of ideas and input of others										will be co					
Novelty of the report								figi	nt assista Hive vou	nt, so we ir partial i	grades	- please			
Contribution to the discussion								do	not ben	d					

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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Fight (Round no.):	oom: <u>+</u> Stage:	Problem no.:
Juror: Olga luishe	V⊖ Signature: _ C	

• 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.

ection and write it in the corresponding box.	omings if there were none to find.
Opp.: Brazil 5	Rev.: Slovakia 5
Physics ±3	Physics ±3
☐ Correct and relevant physics	☐ Correct and relevant physics
☐ Scientific approach	☐ Scientific approach
☐ Validity of conclusions	☐ Validity of conclusions
☐ Accurate answers	☐ Accurate answers
Presentation ±1	Presentation ±1
Clear and understandable	Clear and understandable
☐ Appropriate manner	☐ Appropriate manner
Overall impression	☐ Overall impression
Opponent ±1	Reviewer $\pm 1$
Response to the reporter's solution	Provides a thorough review of report and discussion
Shows the strong and weak points	Expresses own opinion about
*	topics presented or discussed
Finds shortcomings or errors in	Relevance of questions to both the
Relevance of the questions	reporter and the opponent  Draws attention to points missed
☐ Contribution to the discussion	by the reporter or the opponent
	This sheet will be collected by the
	WIO LAW 3-4
	This sheet will be content of the fight assistant, so we can scan it and archive your partial grades — please do not bend
	padd to or deduct from the initial 5 points.  ection and write it in the corresponding box.  no questions were posed or not finding shorter  Opp.: Rear    Correct and relevant physics  Scientific approach  Validity of conclusions  Accurate answers  Presentation ±1  Clear and understandable  Appropriate manner  Overall impression  Opponent ±1  Response to the reporter's solution  Shows the strong and weak points of the report  Finds shortcomings or errors in the report  Relevance of the questions

Final Grade: Opponent

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