		right (Round no.): Ro	om: S
Scoring	Guidelines	Juror: KUNDRAUD	Signature

Stage: _____ Problem no.: ____

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

 Select each partial grade from each sec 	each start with 5 points. add 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.: HUNGART 5	Opp.: SWITZERLAND 5	Rev.: AUSTRIA 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	Expresses own opinion about topics presented or discussed
symbols	Finds shortcomings or errors in the report	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
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: Opponent

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Fight (Round no.):	Room	n: K Stage: Problem no.: 6
Juror: STEUE	ADAMS'	Signature: S.F.Co
	problem and	explanation of the observed phenomena • an
s and principles of the	problem san e	Explanation of the observed phenomena a on 1

• a presentation of the appropriate concepts, theorie application of appropriate mathematics • reasonable appropriate) • linking of theoretical and experiment complex ideas in an effective and understandable mar

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 reporter, opponent and reviewer Consider the following suggestions to Select each partial grade from each set 	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 write it in the corresponding box. no questions were posed or not finding shorto				
Rep.: HINGARY 5	Opp.: SWITZERLAND 5	Rev.: AUSTRIA 5			
Physics ±3	Physics ±3	Physics ±3			
Correct and relevant physics 0.5 Scientific approach conditions Validity of conclusions Leave Accurate answers 40.5 Does not link cypt by the of	☐ Correct and relevant physics → I☐ Scientific approach Beack?☐ Validity of conclusions?☐ Accurate answers Misself	☐ Correct and relevant physics + 2☐ Scientific approach☐ Validity of conclusions☐ Accurate answers☐			
Presentation ±1	Presentation ±1 0.5	Presentation ±1			
☐ Clear and understandable ☐ Appropriate manner Compressive. ☐ Overall impression Rushis.	☐ Clear and understandable + 0.5 ☐ Appropriate manner + 0.5 ☐ Overall impression - 0.5 ☐ Lub form - every	☐ Clear and understandable ∤ (☐ Appropriate manner ☐ Overall impression			
Reporter ±1 - 0 5	Opponent ±1 -D.2	Reviewer ±1			
Quality of experimental Little	Response to the reporter's solution	Provides a thorough review of report and discussion + 1			
☐ Structure + 0.5 ☐ Explanation of formulae and	Shows the strong and weak points of the report $+0.5$	Expresses own opinion about topics presented or discussed			
Symbols X handway new Appropriate models, conformity	Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent			
of dimensions X	Relevance of the questions -0.5	Draws attention to points missed by the reporter or the opponent			
Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion o	by the reporter of the opponent			
References, proper citations of ideas and input of others \circ		This sheet will be collected by the fight assistant, so we can scan it and			
☐ Novelty of the report		fight assistant, 30 the archive your partial grades – please			
☐ Contribution to the discussion		do not bend			
Final Grade: Reporter	Final Grade: Opponent Revised	Final Grade: Reviewer after IOC feedback and approved by EC on 2011-11-03			

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6	$rac{n}{n}$	100	g .	M		# #	#				Ø	M	
	CO			# #	S.	M	8	M		Ø	ı		2

Fight (Round no.): 2 Room: Stage: Problem no.:	
Juror: CHUNG, BYUNGHOWSignature: W. M. 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:

appropriate mathematics presented • the copponent appreciated and highlighted the s	opponent critiqued the experimental technique use trengths and weaknesses of the report	and principles • the opponent understood the ed and questioned the validity of the data • the
A review should show that:		
important aspects (especially the controver	ctive summary of the performances the reporter risial 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 reporter, opponent and reviewer Consider the following suggestions 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> . action and <i>write it</i> in the corresponding box. no questions were posed or not finding shortcy.	
Rep.: HUNGARY 5	Opp.: Swithall 5	Rev.: AUSTRIA 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 ☐ Accurate answers	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
U 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 symbols	of the report Finds shortcomings or errors in	topics presented or discussed
Appropriate models, conformity of dimensions	the report Relevance of the questions	reporter and the opponent
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 con- archive your partial grades – please
☐ 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

Capring Cristali	Fight (Round no.): 2	m: K Stage: 1 Problem no.: 6
Scoring Guideli	Nes Juror: I Cachachad 20 T. Gaehechilad 20	Signature: O. J. L. M
A report should include:	1. Gachenie	
• a presentation of the appropriate conce application of appropriate mathematics •	pts, theories and principles of the problem • an reasonable experimental technique to gather and experimental findings to draw suitable conclusionable manner	record data (or demonstrate the nhenomena if
An opposition should show that • the opponent challenged the reporter's appropriate mathematics presented • the opponent appreciated and highlighted the second	understanding of the presented concepts, theories	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 controve	ective summary of the performances the reporter rsial ones) • the reviewer's personal opinion was i on-trivial and demonstrated, where possible, the red by the reporter and the opponent	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 	o add to or deduct from the initial 5 points. ection and write it in the corresponding box. no questions were posed or not finding shorto	omings if there were none to find.
Rep.: Hungary 5	Opp.: Switzerland 5	Rev.: Austria 5
Physics ±3	Physics ±3	Physics ±3
Correct and relevant physics	Correct and relevant physics	Correct and relevant physics
Scientific approach		Scientific approach
₩ 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
日 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
t 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
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 confight assistant, so we confight assistant, so we confight assistant assistant assistant assistant as we confight assistant.
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

Final Grade: Reporter

	0 1 10	Fight (Round no.):	Room:	
Scoring	Guidelines	lurar Mir Par	Charalie	Cian

Fight (Round no.)	: Room:		Stage: <u> </u>	<u>1 </u>	oblem no.: _	0
		~! ^			Aller .		
Juror:	Nicolas	(heralih	Signature	: 0	UC .	٠, ر	

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.

 Select each partial grade from each sec 	each start with 5 points. add to or deduct from the initial 5 points. ction and write it in the corresponding box. to questions were posed or not finding shortc	,			
Rep.: An Hurym 5	Opp.: Santer lend 5	Rev.: Anstria 5			
Physics ±3	Physics ±3	Physics ±3			
 □ Correct and relevant physics □ Scientific approach □ Validity of conclusions □ Accurate answers 	 □ Correct and relevant physics □ Scientific approach □ Validity of conclusions □ Accurate answers 	☐ Correct and relevant physics ☐ Scientific approach ☐ Validity of conclusions ☐ Accurate answers			
Presentation ±1	Presentation ±1	Presentation ±1			
Clear and understandableAppropriate mannerOverall impression	☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression	☐ 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	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	☐ 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 con- archive your partial grades – please			
Contribution to the discussion		do not bend			
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Final Grade: Opponent

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	Fight (Round no.): 2 Room	m: Stage: Problem no.:		
Scoring Guideli	nes Juror: METIN TOLAN			
application of appropriate mathematics •	epts, theories and principles of the problem • an reasonable experimental technique to gather and experimental findings to draw suitable conclusionable manner	record data for demonstrate the phenomena if		
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, 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		
important aspects (especially the controve	ective summary of the performances the reporter ersial ones) • the reviewer's personal opinion was in non-trivial and demonstrated, where possible, the resed by the reporter and the opponent	n avidance last just consoficial above settend		
 The reporter, opponent and reviewer Consider the following suggestions to Select each partial grade from each select each partial grade from each p	s consists of a partial grade for <i>physics, presen</i> reach start with 5 points. In add to or deduct from the initial 5 points. In ection and write it in the corresponding box. In a questions were posed or not finding shortc			
Rep.: Hungarig 5	Opp.: Shitoland 5	Rev.: Anshing 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 ☐ Appropriate manner ☐ Overall impression		
Reporter ±1	Opponent ±1	Reviewer ±1/		
☐ Quality of experimental technique(s) ☐ Structure	Response to the reporter's solution Shows the strong and weak points of the report	Provides a thorough review of report and discussion Expresses own opinion about tonics prosented or discussed.		
☐ Explanation of formulae and symbols☐ Appropriate models, conformity	Finds shortcomings or errors in the report	topics presented or discussed Relevance of questions to both the 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 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: Reporter	Final Grade: Opponent	Final Grade: Reviewer		



		Fight (Round no.): Room:	:	Stage: _
Scoring	Guidelines	Juror: KUNDRAUK	Signature	/:

• 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 naints

oonsider the following suggestions to	and to or acoust from the filling 5 points.	
Select each partial grade from each secDon't punish missing 'answers' when n	tion and <i>write it</i> in the corresponding box. o questions were posed or not finding shortc	omings if there were none to find.
Rep.: SWITZERLAN 5	Opp.: AUSTRIA 5	Rev.: <u>4006427</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 -0,5	Presentation ±1 FO, T
☐ 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 com- archive your partial grades – please
Contribution to the discussion		do not bend

Final Grade: Opponent

Scoring Guidelines

Fight (Round no.): 2 Room: K Stage: 2 Problem no.: 4Juror: STEVE ADAMS Signature: S.F.O.

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 secDon't punish missing 'answers' when n	ction and write it in the corresponding box. o questions were posed or not finding shortc	omings if there were none to find.
Rep.: 3 WITZERLAND 5	Opp.: AUSTRIA 5	Rev.: HUNGARY 5
Physics ±3	Physics ±3	Physics ±3
Correct and relevant physics + 2 Scientific approach let we conclusions - 2 Validity of conclusions - 2 Accurate answers approach Empirical did a proposition Presentation ±1 Clear and understandable + 1 Appropriate manner Overall impression	□ Correct and relevant physics + □ Scientific approach Did not from Validity of conclusions on model. □ Accurate answers the please the conclusions □ Accurate answers the please the conclusions □ Clear and understandable □ Appropriate manner - □ Overall impression	☐ Correct and relevant physics ☐ Scientific approach ☐ Validity of conclusions ☐ Accurate answers Presentation ±1 ☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression
Reporter ±1	Opponent ±1	Reviewer ±1
☐ Quality of experimental technique(s) ↓ Ø · \$	Response to the reporter's solution	Provides a thorough review of report and discussion X
□ Structure ↓ 0. ∫ □ Explanation of formulae and symbols □ 0. S □ Appropriate models, conformity of dimensions the formulae and symbols.	 ☐ Shows the strong and weak points of the report ☐ Finds shortcomings or errors in the report ☐ Relevance of the questions	Expresses own opinion about topics presented or discussed Relevance of questions to both the reporter and the opponent Draws attention to points missed
Slides, on-site experiments, audio, video, as appropriate References, proper citations of ideas and input of others	Contribution to the discussion Nov aways formet or report.	This sheet will be collected by the
Novelty of the report Contribution to the discussion		fight assistant, so the same archive your partial grades — please do not bend

Final Grade: Reporter

Final Grade: Opponent

		Fight (Round no.): Room: Stage: Problem r
Scoring	Guidelines	Juror: AHARG KY WATTOON Signature: A 1-11

Α	report	sho	uld	ine	duc	de:

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

An opposition should show that:

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

A review should show that:

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

 Consider the following suggestions to add to or deduct from the initial 5 points. Select each partial grade from each section and write it in the corresponding box. Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find. 							
Rep.: Switterland 5	Opp.: AUSTRIA 5	Rev.: HUNGARY 5					
Physics ±3	Physics ±3	Physics ±3					
Correct and relevant physics	Correct and relevant physics	Correct and relevant physics					
Scientific approach	Scientific approach Validity of conclusions	Scientific approach					
Validity of conclusions	☐ Validity of conclusions	☐ Validity of conclusions					
☐ Accurate answers	Accurate answers	☐ Accurate answers					
Presentation ±1 + 0 16	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					
•	11-	La Overdii impressioni					
Reporter ±1	Opponent ±1	Reviewer ±1					
		Reviewer ±1 Provides a thorough review of					
Reporter ±1 Quality of experimental technique(s)	Opponent ±1 Response to the reporter's solution Shows the strong and weak points	Reviewer ±1 Provides a thorough review of report and discussion Expresses own opinion about					
Reporter ±1 Quality of experimental technique(s)	Opponent ±1 Response to the reporter's solution Shows the strong and weak points of the report Finds shortcomings or errors in	Reviewer ±1 Provides a thorough review of report and discussion Expresses own opinion about topics presented or discussed					
Reporter ±1 Quality of experimental technique(s) Structure Explanation of formulae and symbols Appropriate models, conformity	Opponent ±1 Response to the reporter's solution Shows the strong and weak points of the report Finds shortcomings or errors in the report	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					
Reporter ±1 Quality of experimental technique(s) Structure Explanation of formulae and symbols Appropriate models, conformity of dimensions Slides, on-site experiments, audio.	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	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 ±1 Quality of experimental technique(s) Structure Explanation of formulae and symbols Appropriate models, conformity of dimensions	Opponent ±1 Response to the reporter's solution Shows the strong and weak points of the report Finds shortcomings or errors in the report	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					
Reporter ±1 Quality of experimental technique(s) Structure Explanation of formulae and symbols Appropriate models, conformity of dimensions Slides, on-site experiments, audio.	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	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					
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	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	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					
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	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	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					

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

	Fight (Round no.): Roo	m: Kage: 2 Problem no.:			
Scoring Guidelii	1es Juror: I. Gachechilad				
application of appropriate mathematics • re	ts, theories and principles of the problem • an easonable experimental technique to gather and experimental findings to draw suitable conclusidable 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 oponent critiqued the experimental technique us 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	tive summary of the performances the reporter ial ones) • the reviewer's personal opinion was n-trivial and demonstrated, where possible, the did by the reporter and the opponent	n evidence (not just superficial observations)			
 The reporter, opponent and reviewer e Consider the following suggestions to e Select each partial grade from each sec 	consists of a partial grade for <i>physics, presen</i> 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 shorto				
Rep.: Switzerland 5	Opp.: Austria 5	Rev.: Hungary 5			
Physics ±3	Physics ±3	Physics ±3			
☐ Correct and relevant physics	☐ Correct and relevant physics	☐ Correct and relevant physics			
	Scientific approach				
Validity of conclusions	Lt Validity of conclusions	☐ Validity of conclusions			
☐ Accurate answers	☐ Accurate answers	☐ Accurate answers			
Presentation ±1	Presentation ±1	Presentation ±1			
Clear and understandable	由 Clear and understandable	☐ Clear and understandable			
☐ Overall impression	Appropriate manner	Appropriate manner			
Overall impression	U Overall impression	년 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 symbols	of the report Finds shortcomings or errors in	topics presented or discussed Relevance of questions to both the			
Appropriate models, conformity of dimensions	the report	reporter and the opponent			
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			
Novelty of the report		This sheet will be estained 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

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

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					Key.
Scoring Guidelii	19 0 6	Fight (Round no.):1	Room	: K Stage: -2 Problem no.:
Scoring Guidelli	ries	Juror: Nicolas	Cheval	ica	Signature: Collins
application of appropriate mathematics • r	easonable e Experimenta	xperimental techniq I findings to draw	ue to gather	and re	aplanation of the observed phenomena • an ecord data (or demonstrate the phenomena if as • an attempt to communicate difficult or
An opposition should show that: • the opponent challenged the reporter's un	<i>nderstandin</i> pponent <i>crit</i>	g of the presented c	ntal techniqu	ories a e used	nd <i>principles</i> • the opponent understood the land questioned the <i>validity</i> of the <i>data</i> • the
important aspects (especially the controvers	<i>sial</i> ones) • : on-trivial and	the reviewer's <i>perso</i> d demonstrated, who	<i>nal opinion</i> v ere possible, t	vas in	nd opponent • the reviewer appreciated the evidence (not just superficial observations) • viewer's understanding of concepts, theories,
 The grade for each of the three teams The reporter, opponent and reviewer Consider the following suggestions to Select each partial grade from each see Don't punish missing 'answers' when remarks 	each <i>start</i> i <i>add</i> to or a ction and w	with 5 points. leduct from the ini vrite it in the corre	tial 5 points sponding bo	X.	
Rep.: Swider one 5	Орр.	: Austria	5		Rev.: Hungary 5
Physics ±3 ☐ Correct and relevant physics ☐ Scientific approach ☐ Validity of conclusions ☐ Accurate answers	☐ Scie	rect and relevant entific approach dity of conclusio urate answers			Physics ±3 ☐ Correct and relevant physics ☐ Scientific approach ☐ Validity of conclusions ☐ Accurate answers
Presentation ±1 ☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression	☐ Clea	ntation ±1 or and understan ropriate manner rall impression		Control of the Contro	Presentation ±1 Clear and understandable Appropriate manner Overall impression
Reporter ±1 Quality of experimental technique(s)		nent ±1 Donse to the repo	orter's		Reviewer ±1 Provides a thorough review of report and discussion
Structure Explanation of formulae and symbols		of the report Finds shortcomings or errors in		nts	 Expresses own opinion about topics presented or discussed Relevance of questions to both the
Appropriate models, conformity of dimensions Slides, on-site experiments, audio, video, as appropriate	☐ Rele	report vance of the que cribution to the d			reporter and the opponent Draws attention to points missed by the reporter or the opponent
References, proper citations of ideas and input of others Novelty of the report Contribution to the discussion				And the second s	This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please do not bend

Final Grade: Opponent

Final Grade: Reviewer

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

Final Grade: Reporter

							Ken.
Cooring Ciridal		Fight (Round no	.): <u> </u>	oom: _	<u> </u>	nge: 2 F	roblem no.:
Scoring Guideli	nes	Juror: HETI	/ TOLA	<u> </u>	Signature: _	Vac	
A report should include:							
 a presentation of the appropriate conce application of appropriate mathematics appropriate) linking of theoretical and complex ideas in an effective and understa 	reasonable e experimenta	xperimental technic I <i>l findinas</i> to draw	iue to <i>aather</i> a	ind reci	ord data (or e	demonstrate ti	he <i>nhen</i> omena if
An opposition should show that • the opponent challenged the reporter's appropriate mathematics presented • the opponent appreciated and highlighted the	<i>understandin</i> opponent <i>cri</i> i	tiqued the experime	ntal technique	ies and used a	d <i>principles</i> • nd questione	the opp on ent d the <i>validity</i> (understood the
A review should show that:					***************************************		
 the reviewer succeeded in giving an objection important aspects (especially the controversuch personal opinions were informative, reprinciples and appropriate mathematics us 	e rsial ones) • non-trivial and	the reviewer's <i>perso</i> d demonstrated, wh	enal opinion wa ere possible, th	as in ev	idence lant i	ust supprficial	observations) -
 The grade for each of the three team The reporter, opponent and reviewer Consider the following suggestions to Select each partial grade from each se Don't punish missing 'answers' when 	r each <i>start</i> o <i>add</i> to or <i>a</i> ection and и	with 5 points. Heduct from the ini Vrite it in the corre	tial <i>5 points</i> . sponding box				
Rep.: Switzsland 5	Орр.	: Austria	5	TO SERVICE AND ADDRESS OF THE PROPERTY OF THE	Rev.:_	lanjag	5
Physics ±3 +2	Physic	cs ±3	+2		Physics ±	:3	0
Correct and relevant physics	☐ Cor	rect and relevan	t physics] [and relevar	nt physics
Scientific approach	1	entific approach				ic approach	
☐ Validity of conclusions	l	dity of conclusio	ns			of conclusion	ons
☐ Accurate answers	│	urate answers	***************************************	, L	ل Accurat	e answers	gashinidassanapos de profesionida infrastrum e prose progr
Presentation ±1	Presei	ntation ±1	7A,] F	resenta	tion ±1	0
Clear and understandable	☐ Clea	ır and understan	dable		☐ Clear ar	nd understar	ndable
☐ Appropriate manner		ropriate manner	•			riate manne	r
Overall impression	│	rall impression			Overall	impression	
Reporter ±1	Oppor	nent ±1	Ø	R	leviewer	±1	+1
Quality of experimental technique(s)	☐ Resp	oonse to the repo	orter's		Provides report a	s a thorough nd discussio	review of
☐ Structure	☐ Show	ws the strong and	d weak point	ts E		es own opini resented or	
Explanation of formulae and symbols	☐ Find	of the report Finds shortcomings or errors in			Relevan	ce of auestic	ons to both the
Appropriate models, conformity of dimensions		the report			reporter and the opponent Draws attention to points missed		
Slides, on-site experiments, audio, video, as appropriate		ribution to the d		-	by the re	porter or th	ne opponent
References, proper citations of ideas and input of others	**************************************					et will be coll	911 200111
☐ Novelty of the report				***************************************	fight ass	istanii, so we e your partial gr	rades – please
Contribution to the discussion					do not l	pend	

Final Grade: Opponent

Final Grade: Reporter

Scoring Guidelines

Fight (Round no.): 2 Room	n: _K Stage:	Problem no	o.: <u>2</u>
Juror: KUNDRHUK	Signature:	rue ara	; 9

Δ	renort	should	include:
<i> </i>	ICDOIL	SHUUHU	HILLUUE.

• 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

	ction and write it in the corresponding box. o questions were posed or not finding shortco	omings if there were none to find.
Rep.: <u>AUSTRIA</u> 5	Opp.: HUNGARY 5	Rev.: 300172 ERCAND 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 +05	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
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
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Revised after IOC feedback and approved by EC on 2011-11-03

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Final Grade: Reporter

Scoring Guideli	noc		2_Room				m no.:
A report should include: • a presentation of the appropriate concepapplication of appropriate mathematics • rappropriate) • linking of theoretical and complex ideas in an effective and understar	easonable experiment experimental findings dable manner	al technique t	o <i>aather</i> and i	record data (c	r demonstra	te the nhe	namena if
An opposition should show that: • the opponent challenged the reporter's u appropriate mathematics presented • the o opponent appreciated and highlighted the st	nderstanding of the pr pponent critiqued the	experimental	technique use	and principles d and questio	: • the oppo ned the <i>valid</i>	nent unde lity of the	rstood the <i>data</i> • the
A review should show that: • the reviewer succeeded in giving an object important aspects (especially the controver such personal opinions were informative, no principles and appropriate mathematics use	s <i>ial</i> ones) • the review • <i>n-trivial</i> and demonsti	er's <i>personal</i> rated, where i	<i>opinion</i> was ir	evidence (no	at just sunorf	icial obser	untionel a
 The grade for each of the three teams The reporter, opponent and reviewer Consider the following suggestions to Select each partial grade from each se Don't punish missing 'answers' when residual 	each <i>start with 5 poi</i> <i>add</i> to or <i>deduct</i> fro ction and <i>write it</i> in t	<i>ints.</i> m the initial the correspo	5 points . nding box.				•
Rep.: AUSTRIA 5	Opp.: HUNG	ARY	5	Rev.:	SWITZERL	AND.	5
Physics ±3 ☐ Correct and relevant physics ☐ Scientific approach ☐ Validity of conclusions ☐ Accurate answers Presentation ±1	Physics ±3 ☐ Correct and ☐ Scientific ap ☐ Validity of co ☐ Accurate ans Presentation	proach onclusions swers	ysics	☐ Scien☐ Validi☐ Accur	ct and rele tific approa ty of concl ate answe	usions	0.5 ysics & f
☐ Clear and understandable ☐ Appropriate manner +\ ☐ Overall impression	Clear and un Appropriate Overall impre	derstandab manner/	Ax	☐ Clear	ation ±1 and under priate man ill impressi	standabl nner	e +1
Reporter ±1	Opponent ±1		r's	Review	er ±1	ugh rovie	0.5
technique(s) Structure Explanation of formulae and symbols Appropriate models, conformity of dimensions Slides, on-site experiments, audio.	solution Shows the strong the report Finds shortco the report Relevance of Contribution	rong and w Note for findings or en Note for the distribution of th	eak points rors in	Expres topics Relevate report Draws	sses own o presented ince of que er and the attention reporter o	ssion pinion al or discu estions to oppone to points	bout ssed X o both the nt s missed
video, as appropriate References, proper citations of ideas and input of others Novelty of the report Contribution to the discussion				fight i archiv	heet will be essistant, so v e your parti ot bend	210 ('dil 3~~	

Final Grade: Opponent

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Fight (Round no.)	:_2_	_Room:	Stage:	3	_ Problem no.:	2
Juran: AHLING	128116	JUH DIN Signat	uro: In	CA E.	11	_

• 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

principles and appropriate mathematics used by the reporter and the opponent											
 The reporter, opponent and reviewer expensions. Consider the following suggestions to a Select each partial grade from each second 	consists of a partial grade for <i>physics, present</i> each <i>start with 5 points</i> . add to or <i>deduct</i> from the initial <i>5 points</i> . tion and <i>write it</i> in the corresponding box. o questions were posed or not finding shortco										
Rep.: AUSTRA 5	Opp.: HUNGARY 5	Rev.: SwiTzerland 5									
Physics ±3	Physics ±3	Physics ±3									
Correct and relevant physics o	☐ Correct and relevant physics	☐ Correct and relevant physics									
Scientific approach	Scientific approach	Scientific approach									
☐ Validity of conclusions ☐ Accurate answers	☐ Validity of conclusions	₩ Validity of conclusions									
Accurate answers	☐ Accurate answers	Accurate answers + 015									
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 +03	Opponent ±1 +0,7	Reviewer ±1 fo.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	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 lideas and input of others		This sheet will be collected by the $(7 \cdot 2)$									
☐ Novelty of the report		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 Revised a	Final Grade: Reviewer fter IOC feedback and approved by EC on \$2011-11-03									

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Convince Caridali	Fight (Round no.): 2 Roo	m: <u>K</u> Stage: 3 Problem no.: 2
Scoring Guideli	nes Juror: T. Gachechilad	2 e Signature: <u>a 2l M</u> /
A report should include:		* / /
• a presentation of the appropriate concepapplication of appropriate mathematics • 1	reasonable experimental technique to gather and experimental findings to draw suitable conclusi	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 u appropriate mathematics presented • the o opponent appreciated and highlighted the s	nderstanding 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 risial ones) • the reviewer's personal opinion was con-trivial and demonstrated, where possible, the ed by the reporter and the opponent	n evidence (not just superficial observations)
 The reporter, opponent and reviewer Consider the following suggestions to Select each partial grade from each se 	consists of a partial grade for <i>physics</i> , <i>preser</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 shorte	
Rep.: Austria 5	Opp.: Hungary 5	Rev.: Switzerland 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 an	Accurate answers
Presentation ±1	Presentation ±1	Presentation ±1
Clear and understandable	Clear and understandable	Clear and understandable
Appropriate manner	☐ Appropriate manner	Appropriate manner
到 Overall impression	⊕ Overall impression	Overall impression
Reporter ±1	Opponent ±1	Reviewer ±1
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
∐ Structure	Shows the strong and weak points of the report	Expresses own opinion about
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, so we can a archive your partial grades – please
Contribution to the discussion		do not bend
Final Grade: Reporter	Final Grade: Opponent Revised	Final Grade: Reviewer after IOC feedback and approved by EC on 2011-11-03

Fight (Round no.):		K	_Stage: 3	_ Problem no.: _	2
Juror: Nicolas	Chrolier	Signatu	re: <u> </u>		

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 sec Don't punish missing 'answers' when r 	ction and write it in the corresponding box. no questions were posed or not finding shortc	omings if there were none to find.				
Rep.: Austria 5	Opp.: Hungary 5	Rev.: Switzerland 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 +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				
☐ Novelty of the report		This sheet will be com- fight assistant, so we can scan it and archive your partial grades – please				
☐ Contribution to the discussion		do not bend				
5						

Final Grade: Opponent

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	Fight (Round no.): 2	Room	: Stage:	3_ Problem no.: 2				
Scoring Guidelin	1es Juror: METIN TO	CAN	Signature:	Voe				
A report should include: • a presentation of the appropriate concept application of appropriate mathematics • reappropriate) • linking of theoretical and excomplex ideas in an effective and understand	easonable experimental technique t o g xperimental findings to draw <i>suitab</i>	<i>gather</i> and <i>re</i>	ecord data (or demo	nstrate the phenomena if				
An opposition should show that: • the opponent challenged the reporter's unappropriate mathematics presented • the opponent appreciated and highlighted the street.	pponent <i>critiqued</i> the <i>experimental te</i>	<i>chnique</i> used	nd <i>principles</i> • the of and questioned the	opponent understood the validity of the data • the				
A review should show that: • the reviewer succeeded in giving an object important aspects (especially the controvers such personal opinions were informative, no principles and appropriate mathematics used	<i>ial</i> ones) • the reviewer's <i>personal op</i> <i>n-trivial</i> and demonstrated, where po	<i>inion</i> was in	evidence (not just se	uperficial observations) •				
 The grade for each of the three teams The reporter, opponent and reviewer e Consider the following suggestions to e Select each partial grade from each sec Don't punish missing 'answers' when n 	each start with 5 points. add to or deduct from the initial 5 stion and write it in the correspond	<i>points</i> . ling box.						
Rep.: Austria 5	Opp.: Hungary	5	Rev.: Sur de	Sand 5				
Physics ±3	Physics ±3	0	Physics ±3	+1				
☐ Correct and relevant physics☐ Scientific approach☐ Validity of conclusions☐ Accurate answers	☐ Correct and relevant phy☐ Scientific approach☐ Validity of conclusions☐ Accurate answers	sics	☐ Correct and relevant physics ☐ Scientific approach ☐ Validity of conclusions ☐ Accurate answers					
Presentation ±1	Presentation ±1	-1	 Presentatio	n ±1 +1				
☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression	☐ Clear and understandable☐ Appropriate manner☐ Overall impression	2	☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression					
Reporter ±1	Opponent ±1	-1	Reviewer ±1	+1				
Quality of experimental technique(s)	Response to the reporter solution		Provides a thorough review of report and discussion					
☐ Structure	Shows the strong and wer	ak points	Expresses own opinion about					
Explanation of formulae and symbols	of the report Finds shortcomings or err	ors in	topics presented or discussed Relevance of questions to both the					
Appropriate models, conformity of dimensions	the report Relevance of the question		reporter and the opponent Draws attention to points missed					
Slides, on-site experiments, audio, video, as appropriate	Contribution to the discus	1	by the reporter or the opponent					
References, proper citations of ideas and input of others				vill be collected by the				
☐ Novelty of the report			This sheet will be conscan it and fight assistant, so we can scan it and archive your partial grades — please					
Contribution to the discussion			do not bend	i				
Final Grade: Reporter	Final Grade: Opponent	Revised a	Final Grade: Re fter IOC feedback and a	eviewer approved by EC on 2011-11-03				