	Field (Days)	2		
Scoring Guideli	5.60 AD AD		n: C Stage: 1 Prob	olem no.:
	Juror: <u>Kau</u>	Vinnen	_ Signature:	
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 understandard 	reasonable experimental tec experimental findings to dr	h niqu e to <i>gather</i> and i	record data (or demonstrate the n	henomena if
An opposition should show that • the opponent challenged the reporter's tappropriate mathematics presented • the opponent appropriated and highlighted the second component appreciated and highlighted appreciated and highlighted and highlighted appreciated and highlighted and highlighted appreciated and highli	understanding of the present opponent critiqued the exper	<i>imental technique</i> use	and <i>principles</i> • the opponent uned and questioned the <i>validity</i> of the	derstood the
A review should show that:				
 the reviewer succeeded in giving an obje important aspects (especially the controver such personal opinions were informative, n principles and appropriate mathematics use 	<i>rsial</i> ones) • the reviewer's <i>p</i> #on-trivial and demonstrated,	<i>ersonal opinion</i> was in where possible, the re	n evidence (not just superficial ob-	servations) .
 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 	reach start with 5 points. Do add to or deduct from the contion and write it in the co	e initial <i>5 points</i> . orresponding box.		
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Rep.: Australia 5	Opp.: China	5	Rev.: Gh many	5
Physics ±3	Physics ±3	2	Physics ±3	2
☐ Correct and relevant physics		vant physics		hvsics
☐ Scientific approach	☐ Scientific approa		Scientific approach	,
☐ Validity of conclusions	☐ Validity of conclu	ısions	☐ Validity of conclusions	;
Accurate answers	☐ Accurate answer	S	☐ Accurate answers	
Presentation ±1	Presentation ±1	ð	Presentation ±1	
Elear and understandable		tandable	☐ Clear and understanda	ıble
☐ Appropriate manner	Appropriate man	ner	☐ Appropriate manner	
Overall impression	Overall impression	n	☐ Overall impression	
Reporter ±1 +1	Opponent ±1	-16	Reviewer ±1	+3.
Quality of experimental technique(s)	Response to the resolution	reporter's	Provides a thorough re report and discussion	view of
☐ Structure	■ Shows the strong	and weak points	Expresses own opinion	about
Explanation of formulae and symbols	of the report Finds shortcoming	gs or errors in	topics presented or dis Relevance of guestions	cussed : to both the
Appropriate models, conformity of dimensions	the report Relevance of the	questions	reporter and the oppor	nent
Slides, on-site experiments, audio, video, as appropriate			Draws attention to point by the reporter or the o	opponent
References, proper citations of ideas and input of others			This sheet will be collect fight assistant, so we can	
Novelty of the report			fight assistant, so we can archive your partial grade	es – 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

do not bend

	Fight (Round no.): 2	Room: C Stage: 1 Problem no.:
Scoring Guidelin	1es Juror: <u>GEORGE LASKHIS</u>	CHVI'LI' Signature: 1 m M/ Cm
application of appropriate mathematics • r	easonable <mark>experimental technique</mark> to <i>gath</i> experimental findings to draw suitable co	• an explanation of the observed phenomena • an ever and record data (or demonstrate the phenomena if conclusions • an attempt to communicate difficult or
An opposition should show that: • the opponent challenged the reporter's unappropriate mathematics presented • the opponent appreciated and highlighted the state.	nderstanding of the presented concepts, ti pponent critiqued the experimental techni	heories and principles • the opponent understood the que used and questioned the validity of the data • the
 important aspects (especially the controver such personal opinions were informative, no principles and appropriate mathematics use 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 	sial ones) • the reviewer's personal opinio on-trivial and demonstrated, where possible downward by the reporter and the opponent consists of a partial grade for physics, peach start with 5 points. add to or deduct from the initial 5 points of the corresponding the corresponding to the corresponding on the corresponding o	
Rep.: 5	Opp.:	Rev.:5
Physics ±3 Correct and relevant physics Scientific approach Validity of conclusions Accurate answers	Physics ±3 Correct and relevant physics Scientific approach Validity of conclusions Accurate answers	Physics ±3 Correct and relevant physics Scientific approach Validity of conclusions Accurate answers
Presentation ±1 Clear and understandable Appropriate manner Overall impression	Presentation ±1 ☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression	Presentation ±1 Clear and understandable Appropriate manner Overall impression
Reporter ±1	Opponent ±1	Reviewer ±1
 ☐ Quality of experimental technique(s) ☐ Structure ☐ Explanation of formulae and symbols ☐ Appropriate models, conformity of dimensions ☐ Slides, on-site experiments, audio, video, as appropriate ☐ References, proper citations of 	Response to the reporter's solution Shows the strong and weak p of the report Finds shortcomings or errors the report Relevance of the questions Contribution to the discussion	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
ideas and input of others Novelty of the report		This sheet will be confected by fight assistant, so we can scan it and archive your partial grades — please

Final Grade: Opponent

☐ Contribution to the discussion

Final Grade: Reporter

Final Grade: Reviewer

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

do not bend

Scorina	Guidelines	Fight (Round no.):
JUILII	QUIUEIIIES	Juror Kim F

Fight (Round no.): _	Room:	Stage:	Problem no.:	3
luror: <u>Kim</u> Ŧ	Peimann	Signature:		

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

A	rep	ort	shou	ıld	inc	lude	3:
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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:

Final Grade: Reporter

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

 Consider the following suggestions to add to or deduct from the initial 5 points. Select each partial grade from each section and write it in the corresponding box. Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find. 							
Rep.: Australia 5	Opp.: China 5	Rev.: Germany 5					
Physics ±3	Physics ±3	Physics ±3					
☐ Correct and relevant physics	Correct and relevant physics	☐ Correct and relevant physics					
☐ Scientific approach	☐ Scientific approach	☐ Scientific approach					
☐ Validity of conclusions	☐ Validity of conclusions	☐ Validity of conclusions					
☐ Accurate answers	☐ Accurate answers	☐ Accurate answers					
Presentation ±1	Presentation ±1	Presentation ±1					
Clear and understandable	☐ Clear and understandable	☐ Clear and understandable					
☐ Appropriate manner	☐ Appropriate manner	☐ Appropriate manner					
Overall impression	Overall impression	☐ Overall impression					
Reporter ±1	Opponent ±1	Reviewer ±1					
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion					
☐ Structure	☐ Shows the strong and weak points	Expresses own opinion about					
Explanation of formulae and	of the report	topics presented or discussed					
symbols	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 defined a significant figure archive your partial grades — please					
Contribution to the discussion		do not bend					
in a grant and a state of the s							

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Fight (Round no.):		s	tage:I	Problem no.:_	3_
Juror: Tomáš (BEDUSEK	Signature:	The	B29	

Final Grade: Reviewer

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

A report should include:

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

An opposition should show that:

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

A review should show that:

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

 Select each partial grade from each section and write it in the corresponding box. Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find. 						
Rep.: AUSTRALIA 5	Opp.: CHINA 5	Rev.: GERMANY 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 + 1	Presentation ±1	Presentation ±1				
☐ Clear and understandable☐ Appropriate manner☐ Overall impression	☐ Clear and understandable☐ Appropriate manner☐ Overall impression	☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression				
Reporter ±1 + 0.5	Opponent ±1 +0 5	Reviewer ±1 + 1				
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion				
☐ Structure	Shows the strong and weak points of the report	Expresses own opinion about topics presented or discussed				
Explanation of formulae and symbols	Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent				
Appropriate models, conformity of dimensions	☐ Relevance of the questions	Draws attention to points missed by the reporter or the opponent				
☐ Slides, on-site experiments, audio,						
video, as appropriate	\square Contribution to the discussion					
video, as appropriate References, proper citations of ideas and input of others	☐ Contribution to the discussion	This sheet will be collected by the				
video, as appropriate References, proper citations of ideas and input of others Novelty of the report	☐ Contribution to the discussion	This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please				
video, as appropriate References, proper citations of ideas and input of others	Contribution to the discussion	This sheet will be collected by the				

Fight (Round no.): _	$\frac{1}{1}$ Room:	<u> </u>	Stage: _	F	Problem no.:	3
Juror: AKyuli	diev_	Signature	:	94		in the second se

Revised after IOC feedback and approved by EC on 2011

A report should include:

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

An opposition should show that:

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

A review should show that:

Final Grade: Reporter

- the reviewer succeeded in giving an *objective summary* of the performances the *reporter* and *opponent* the reviewer appreciated the *important aspects* (especially the *controversial* ones) the reviewer's *personal opinion* was in evidence (*not* just *superficial observations*) such personal opinions were *informative*, *non-trivial* and demonstrated, where possible, the reviewer's *understanding* of *concepts*, *theories*, *principles and appropriate mathematics* used by the reporter and the opponent
- The grade for each of the three teams consists of a partial grade for physics, presentation and for their specific role.
- The reporter, opponent and reviewer each start with 5 points.
- Consider the following suggestions to add to or deduct from the initial 5 points.
- Select each partial grade from each section and write it in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

	_	
Rep.: 5	Opp.: 5	Rev.: 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 understandable☐ Appropriate manner☐ Overall impression	☐ Clear and understandable☐ Appropriate manner☐ Overall impression	☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression
Reporter ±1	Opponent ±1	Reviewer ±1
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
☐ Structure ☐ Explanation of formulae and	Shows the strong and weak points of the report	Expresses own opinion about topics presented or discussed
symbols	Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent
Appropriate models, conformity of dimensionsSlides, on-site experiments, audio,	Relevance of the questions	Draws attention to points missed by the reporter or the opponent
video, as appropriate	☐ Contribution to the discussion	•
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and
Novelty of the report		archive your partial grades
Contribution to the discussion		do not bend
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	Fight (Round no.): $_$	Room: C Stage: 1 Problem no.:
Scoring Guidelii		os Signature: Ran-L
application of appropriate mathematics • r	easonable <mark>experimental technique t</mark> o <i>gather</i> experimental findings to draw suitable con	• an <i>explanation</i> of the <i>observed phenomena</i> • an rand <i>record data</i> (or <i>demonstrate</i> the <i>phenomena</i> if <i>clusions</i> • an attempt to communicate <i>difficult</i> or
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, the pponent critiqued the experimental techniqu	ories and principles • the opponent understood the ne used and questioned the validity of the data • the
<i>important aspects</i> (especially the <i>controver</i> s	sial ones) • the reviewer's personal opinion varieties. on-trivial and demonstrated, where possible,	orter and opponent • the reviewer appreciated the was in evidence (not just superficial observations) • the reviewer's understanding of concepts, theories,
The <i>reporter</i> , <i>opponent</i> and <i>reviewer</i> . Consider the following <i>suggestions</i> to Select each partial grade from each sea	consists of a partial grade for <i>physics, pr</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 be no questions were posed or not finding sh	;. px.
Rep.: AUSTRALIA 5	Opp.: C411.1 A 5	Rev.: GERHANY 5
hysics ±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	☑ 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	
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1

Presentation +1

Physics ±3

□ Clear and understandable

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

Appropriate manner

Rep.: AUSTRALIA

□ Overall impression

Reporter ±1

Quality of experimental technique(s)

Explanation of formulae and symbols

☐ Appropriate models, conformity of dimensions

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

References, proper citations of ideas and input of others

■ Novelty of the report

Final Grade: Reporter

☐ Contribution to the discussion

Opponent ±1

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

☑ Overall impression

Reviewer ±1



- Provides a thorough review of report and discussion
- Expresses own opinion about topics presented or discussed
- Relevance of questions to both the reporter and the opponent
- Draws attention to points missed by the reporter or the opponent

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

do not bend

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

Scoring Guidelines	Fight (Round no.): 2 Room: C Stage: 2 Problem no.: 5 Juror: Rauflimm Signature: Auf
A report should include: • a presentation of the appropriate concepts, theories application of appropriate mathematics e reasonable of appropriate mathematics expressions.	s and principles of the problem • an explanation of the observed phenomena • an

ate 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 	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.: China 5	Opp.: Germany 5	Rev.: Aurhalia 5
Physics ±3 +2	Physics ±3 +1	Physics ±3 +
		Correct and relevant physics
	□ Scientific approach	
	☐ Validity of conclusions	☐ Validity of conclusions
☐ Accurate answers	☐ Accurate answers	☐ Accurate answers
Presentation ±1	Presentation ±1	Presentation ±1
Clear and understandable	E 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	E 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
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	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: Opponent

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Fight (Round no.):&	Room:	0	Stage: _	2	Problem no.: _	5
Juror: STANISCAN	PANOS	Signature	:	Pour	-/	

• 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 use	ed by the reporter and the opponent	
 The reporter, opponent and reviewer Consider the following suggestions to Select each partial grade from each se 	s consists of a partial grade for <i>physics</i> , <i>presen</i> each <i>start with 5 points</i> . • <i>add</i> to or <i>deduct</i> from the initial <i>5 points</i> . • ection and <i>write it</i> in the corresponding box. no questions were posed or not finding shorte	
Rep.: <i>CHINA</i> 5	Opp.: GERHANY 5	Rev.: AUSTRALIA 5
Physics ±3	Physics ±3 +1	Physics ±3
E Correct and relevant physics Scientific approach	⊞ Correct and relevant physics⊞ Scientific approach	☑ Correct and relevant physics☑ Scientific approach
☐ Validity of conclusions ☐ Accurate answers	☐ Validity of conclusions ☐ Accurate answers	☐ Validity of conclusions ☐ Accurate answers
Presentation ± 1 $+ 0.5$	Presentation ±1 +1	Presentation ±1
☐ Clear and understandable	🗄 Clear and understandable	☐ Clear and understandable
Appropriate manner	☐ Appropriate manner	Appropriate manner
☐ Overall impression	Overall impression	Overall impression
Reporter ±1 +0,5	Opponent ±1 + 1	Reviewer ±1 + 1
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
	Shows the strong and weak points of the report	Expresses own opinion about topics presented or discussed
symbols	Finds shortcomings or errors in	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 earchive your partial grades — please
Contribution to the discussion		do not bend

Final Grade: Reporter

Final Grade: Opponent

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

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	Fight (Round no.): 2 Roor	m: C Stage: 2 Problem no.:
Scoring Guidelin	nes Juror: Kim Freimann	Signature:
application of appropriate mathematics • r	ets, theories and principles of the problem • and easonable experimental technique to gather and experimental findings to draw suitable conclusions dable manner	record data (or demonstrate the phenomena if
An opposition should show that: • the opponent challenged the reporter's unappropriate mathematics presented • the opponent appreciated and highlighted the st	nderstanding of the presented concepts, theories pponent critiqued the experimental technique use	and <i>principles</i> • the opponent understood the ed and questioned the <i>validity</i> of the <i>data</i> • the
important aspects (especially the controvers	ctive summary of the performances the reporter sial ones) • the reviewer's personal opinion was in on-trivial and demonstrated, where possible, the red by the reporter and the opponent	evidence (not just superficial observations) a
 The reporter, opponent and reviewer Consider the following suggestions to Select each partial grade from each see 	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 shortc	
Rep.: Clina 5	Opp.: Germany 5	Rev.: Australia 5
Physics ±3 Correct and relevant physics Scientific approach Validity of conclusions Accurate answers	Physics ±3 Correct and relevant physics Scientific approach Validity of conclusions Accurate answers	Physics ±3 ☐ Correct and relevant physics ☐ Scientific approach ☐ Validity of conclusions ☐ Accurate answers
Presentation ±1 ☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression	Presentation ±1	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	Shows the strong and weak points of the report Finds shortcomings or errors in the report	Expresses own opinion about topics presented or discussed Relevance of questions to both the
Appropriate models, conformity of dimensions Slides, on-site experiments, audio, video, as appropriate	Relevance of the questions Contribution to the discussion	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		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





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Final Grade: Reporter

Scoring Guidelin	Fight (Round no.): 2 Room 105 Juror: Towas Badusek	n: C Stage: 2 Problem no.: 5 Signature: TO BED
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 unappropriate mathematics presented • the opponent appreciated and highlighted the state.	nderstanding 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 data • the
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	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> teach <i>start with 5 points</i> . add to or <i>deduct</i> from the initial <i>5 points</i> . Stion and <i>write it</i> in the corresponding box. o questions were posed or not finding shorter	
Rep.: CHINA 5	Opp.: GERHANY 5	Rev.: AUSTRALIA 5
Physics ±3 Correct and relevant physics Scientific approach Validity of conclusions Accurate answers	Physics ±3 ☐ Correct and relevant physics ☐ Scientific approach ☐ Validity of conclusions ☐ Accurate answers	Physics ±3 ☐ Correct and relevant physics ☐ Scientific approach ☐ Validity of conclusions ☐ Accurate answers
Presentation ±1 Clear and understandable Appropriate manner Overall impression	Presentation ±1 +.5 ☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression	Presentation ±1
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
StructureExplanation of formulae and symbols	☐ Shows the strong and weak points of the report ☐ Finds shortcomings or errors in the report	Expresses own opinion about topics presented or discussed Relevance of questions to both the
 Appropriate models, conformity of dimensions Slides, on-site experiments, audio, video, as appropriate 	☐ Relevance of the questions ☐ Contribution to the discussion	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		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: Opponent Final Grade: Reviewer Revised after IOC feedback and approved by EC on 2011-11-03

Fight (Round no.): 2	_Room:		Stage:	2	Problem no.:	5
Juror: GEORGE LASKHIS	SHWL/ SIE	gnature	: 1/	Tun c/	At LAN	

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 sec Don't punish missing 'answers' when n 	ction and write it in the corresponding box. 10 questions were posed or not finding shortc	omings if there were none to find.
Rep.: 5	Opp.:5	Rev.: 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 ☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression	Presentation ±1 ☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression	Presentation ±1 ☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression
Reporter ±1	Opponent ±1	Reviewer ±1
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
☐ Structure ☐ Explanation of formulae and symbols	☐ Shows the strong and weak points of the report ☐ Finds shortcomings or errors in	Expresses own opinion about topics presented or discussed 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 by the reporter or the opponent
Slides, on-site experiments, audio, video, as appropriate References, proper citations of ideas and input of others	☐ Contribution to the discussion	in he collected by the
☐ Novelty of the report		fight assistant, so we can accent archive your partial grades – please
Contribution to the discussion		do not bend

Final Grade: Reporter

Final Grade: Opponer

6

Final Grade: Reviewer

5

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

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

Juror: Akyuldjiev Signature: 4

A report should include:

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

An opposition should show that:

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

A review should show that:

Final Grade: Reporter

- the reviewer succeeded in giving an *objective summary* of the performances the *reporter* and *opponent* the reviewer appreciated the *important aspects* (especially the *controversial* ones) the reviewer's *personal opinion* was in evidence (*not* just *superficial observations*) such personal opinions were *informative*, *non-trivial* and demonstrated, where possible, the reviewer's *understanding* of *concepts*, *theories*, *principles* and *appropriate mathematics* used by the reporter and the opponent
- The grade for each of the three teams consists of a partial grade for *physics*, *presentation* and for their *specific role*.
- The reporter, opponent and reviewer each start with 5 points.
- Consider the following suggestions to add to or deduct from the initial 5 points.
- Select each partial grade from each section and write it in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.:5	Opp.: 5	Rev.: 5
Physics ±3 Correct and relevant physics Scientific approach Validity of conclusions Accurate answers Presentation ±1 Clear and understandable Appropriate manner Overall impression	Physics ±3 Correct and relevant physics Scientific approach Validity of conclusions Accurate answers Presentation ±1 Clear and understandable Appropriate manner Overall impression	Physics ±3 Correct and relevant physics Scientific approach Validity of conclusions Accurate answers Presentation ±1 Clear and understandable Appropriate manner Overall impression
Reporter ±1 Quality of experimental technique(s) Structure Explanation of formulae and symbols Appropriate models, conformity of dimensions Slides, on-site experiments, audio, video, as appropriate References, proper citations of ideas and input of others Novelty of the report	Opponent ±1 Response to the reporter's solution Shows the strong and weak points of the report Finds shortcomings or errors in the report Relevance of the questions Contribution to the discussion	Reviewer ±1 Provides a thorough review of report and discussion Expresses own opinion about topics presented or discussed Relevance of questions to both the reporter and the opponent Draws attention to points missed by the reporter or the opponent This sheet will be collected by the fight assistant, so we can scan it and fight assistant, so we can scan it and archive your partial grades - please
Contribution to the discussion		do not bend

Final Grade: Opponent

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-		200	7 4	1		1	# #	8	1	10	- A	8	B	4	P2	(C	
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☐ Contribution to the discussion

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Scoring Guidelin	nes	Fight (Round no.) Juror: Livn		n: Stage:	Problem	no.:
		Julion.	1 Contract	Signature.	100	
A report should include: • a presentation of the appropriate concept application of appropriate mathematics • repropriate) • linking of theoretical and complex ideas in an effective and understant	easonable e Experiment	experimental techniq tal findings to draw s	ue to <i>gather</i> and	record data (or dem	onstrate the phen	omena if
An opposition should show that: • the opponent challenged the reporter's u appropriate mathematics presented • the o opponent appreciated and highlighted the si	<i>nderstandi</i> pponent <i>cr</i>	ritiqued the experimer	ntal technique use	and <i>principles</i> • the ed and questioned th	opponent unders e <i>validity</i> of the <i>d</i> i	tood the ata • 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	sial ones) • on-trivial ar	 the reviewer's person nd demonstrated, when 	<i>nal opinion</i> was i ere possible, the r	n evidence (not just :	superficial observe	ations) •
 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 re 	each <i>start</i> <i>add</i> to or ction and	t with 5 points. deduct from the ini write it in the corre:	tial <i>5 points</i> . sponding box.			
Rep.: Germany 5	Орр	:: Australie	5	Rev.:	ina	5
Physics ±3	Phys	ics ±3	.00	Physics ±3	9	0
Correct and relevant physics Scientific approach Validity of conclusions Accurate answers	☐ Sc	orrect and relevant ientific approach alidity of conclusio ccurate answers		Correct an Scientific a Validity of Accurate a	conclusions	sics
Presentation ±1	Prese	entation ±1		Presentatio	n ±1	0
☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression	□ Ар	ear and understan opropriate manner verall impression		☐ Clear and u☐ Appropriat☐ Overall imp)
Reporter ±1	Oppo	onent ±1	0	Reviewer ±	guarante de la constante de la	0
Quality of experimental technique(s)	⊞ Re sol	sponse to the repo lution	orter's	Provides a report and	thorough revie discussion	w of
$oxedsymbol{oxedsymbol{arphi}}$ Structure $oxedsymbol{oxedsymbol{arphi}}$ Explanation of formulae and	△ She of	ows the strong and the report	d weak points	Expresses of topics pres	own opinion ab ented or discus	out
symbols	☐ Fin	ids shortcomings c e report	or errors in	☐ Relevance	of questions to Id the opponen	both th
☐ Appropriate models, conformity of dimensions	l	levance of the que	stions	☐ Draws atte	ntion to points	missed
Slides, on-site experiments, audio, video, as appropriate	Co	ntribution to the d	liscussion	-	orter or the opp	
References, proper citations of ideas and input of others				This sheet '	will be collected nt, so we can scar	by the

Final Grade: Reporter

☐ Novelty of the report



Final Grade: Opponent



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

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archive your partial grades - please



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Fight (Round no.):	2 Room:	Stage:	Problem no.:	1
Juran: STAMSCAV	PANAC	Signaturo:	Part 4	

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

An opposition should show that:

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

A review should show that:

- 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.: GERMANY 5	Opp.: AUSTRALIA 5	Rev.: <i>CHINA</i> 5				
Physics ±3 ☐ Correct and relevant physics	Physics ±3	Physics ±3				
Scientific approach	☐ Correct and relevant physics	Correct and relevant physics				
✓ Validity of conclusions	Scientific approach	☐ Scientific approach				
☐ Accurate answers	☐ Validity of conclusions ☐ Accurate answers	☐ Validity of conclusions				
Presentation ± 1 ± 1	Presentation ±1	Presentation ±1 ← 0.5				
	Clear and understandable	☐ Clear and understandable				
☐ Appropriate manner		☐ Appropriate manner				
☐ Overall impression	① 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				
	☐ Shows the strong and weak points	☐ Expresses own opinion about <i>V</i>				
Explanation of formulae and	of the report	topics presented or discussed v				
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 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		fight assistant, so we can see archive your partial grades – please				
Contribution to the discussion		do not bend				

Final Grade: Reporter

Final Grade: Opponent





		Fight (Round no.):	Room:	Stage: 3 Problem no
Scoring	Guidelines	Juror: Rawlinson	Signature	: Jul

• 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.

 Select each partial grade from each sec 	add to or deduct from the initial 5 points. Ction and write it in the corresponding box To questions were posed or not finding sho	rtcomings if there were none to find.
Rep.: Girmany 5	Opp.: Chara Australia 5	Rev.: Australia. 5
Physics ±3 +4	Physics ±3 +1	Physics ±3
E Correct and relevant physics	Correct and relevant physics	E 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
Elear and understandable	☐ Clear and understandable	☐ Clear and understandable
Appropriate manner	☐ Appropriate manner	☐ Appropriate manner
Overall impression	Overall impression	Overall impression
Reporter ±1 f@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 point of the report	1
Explanation of formulae and symbols	Finds shortcomings or errors in	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	H 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 com- archive your partial grades – please
Contribution to the discussion		s hand

Final Grade: Reporter

Final Grade: Opponent

А	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
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- The reporter, opponent and reviewer each start with 5 points.
- Consider the following suggestions to add to or deduct from the initial 5 points.
- Select each partial grade from each section and write it in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.:5	Opp.:5	Rev.: 5
Physics ±3	Physics ±3 +0.5	Physics ±3
☐ Correct and relevant physics☐ 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 $i\theta.5$	Opponent ±1	Reviewer ±1
Ouality of experimental	Printerior and a second and a s	And the second s
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
technique(s) Structure	solution Shows the strong and weak points	report and discussion Expresses own opinion about
☐ Structure ☐ Explanation of formulae and	solution Shows the strong and weak points of the report	report and discussion
 ☐ Structure ☐ Explanation of formulae and symbols ☐ Appropriate models conformity 	solution Shows the strong and weak points	report and discussion Expresses own opinion about
☐ Structure ☐ Explanation of formulae and	solution Shows the strong and weak points of the report Finds shortcomings or errors in	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
 ☐ Structure ☐ Explanation of formulae and symbols ☐ Appropriate models conformity 	solution Shows the strong and weak points of the report Finds shortcomings or errors in the report	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
 Structure Explanation of formulae and symbols Appropriate models, conformity of dimensions Slides, on-site experiments, audio. 	solution Shows the strong and weak points of the report Finds shortcomings or errors in the report Relevance of the questions	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
 □ Structure □ Explanation of formulae and symbols □ Appropriate models, conformity of dimensions □ Slides, on-site experiments, audio, video, as appropriate 	solution Shows the strong and weak points of the report Finds shortcomings or errors in the report Relevance of the questions	report and discussion Expresses own opinion about topics presented or discussed Relevance of questions to both the reporter and the opponent Draws attention to points missed by the reporter or the opponent

Final Grade: Opponent

Fight (Round no.): 2 Room:	Stage: Problem no.:
Juror: GEORGE LASKHISH VILI	Signature: I melhon

A report should include:

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

An opposition should show that:

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

A review should show that:

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

 Don't punish missing 'answers' when n 	,	strangs in there were none to find.
Rep.: 5	Opp.: 5	Rev.: 5
Physics ±3	Physics ±3	Physics ±3
☐ Correct and relevant physics ☐ Scientific approach	Correct and relevant physics	Correct and relevant physics
☐ Validity of conclusions	Scientific approach Validity of conclusions	Scientific approach
☐ Accurate answers	☐ Validity of conclusions ☐ Accurate answers	☐ Validity of conclusions
— Accurate answers	Accurate answers	☐ Accurate answers
Presentation ±1	Presentation ±1	Presentation ±1
Clear and understandable	☐ Clear and understandable	☐ Clear and understandable
☐ Appropriate manner	☐ Appropriate manner	☐ Appropriate manner
Overall impression	Overall impression	☐ Overall impression
Reporter ±1	Opponent ±1	Reviewer ±1
Quality of experimental technique(s)	Response to the reporter's	☐ Provides a thorough review of
	solution	report and discussion
☐ Structure	☐ Shows the strong and weak points	report and discussion
☐ Explanation of formulae and	Shows the strong and weak points of the report	report and discussion Expresses own opinion about topics presented or discussed
Explanation of formulae and symbols	☐ Shows the strong and weak points	report and discussion Expresses own opinion about
☐ Explanation of formulae and	☐ Shows the strong and weak points of the report ☐ Finds shortcomings or errors in	report and discussion Expresses own opinion about topics presented or discussed Relevance of questions to both the reporter and the opponent
Explanation of formulae and symbols	☐ Shows the strong and weak points of the report ☐ Finds shortcomings or errors in the report	report and discussion Expresses own opinion about topics presented or discussed Relevance of questions to both the
 Explanation of formulae and symbols Appropriate models, conformity of dimensions Slides, on-site experiments, audio. 	 ☐ Shows the strong and weak points of the report ☐ Finds shortcomings or errors in the report ☐ Relevance of the questions 	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
 Explanation of formulae and symbols Appropriate models, conformity of dimensions Slides, on-site experiments, audio, video, as appropriate 	 ☐ Shows the strong and weak points of the report ☐ Finds shortcomings or errors in the report ☐ Relevance of the questions 	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
 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 	 ☐ Shows the strong and weak points of the report ☐ Finds shortcomings or errors in the report ☐ Relevance of the questions 	report and discussion Expresses own opinion about topics presented or discussed Relevance of questions to both the reporter and the opponent Draws attention to points missed by the reporter or the opponent

Final Grade: Opponent

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	CO	7 #				M	V.	J	W	1	W	C	ø	ı			
						Execute 1						-		_		-	

Final Grade: Reporter

Scoring Guidelin			n: C Stage: 3 P	
A report should include: a presentation of the appropriate concepts, application of appropriate mathematics • reasappropriate) • linking of theoretical and expropries ideas in an effective and understanda	sonable experimental techniqu e verimental findings to draw <i>su</i>	e to <i>gather</i> and r	record data (or demonstrate th	ne phenomena if
An opposition should show that: the opponent challenged the reporter's underpropriate mathematics presented • the oppopponent appreciated and highlighted the street	onent <i>critiqued</i> the <i>experiment</i>	al technique use	and <i>principles</i> • the opponent d and questioned the <i>validity</i> o	understood the of the data • the
A review should show that: the reviewer succeeded in giving an objective important aspects (especially the controversian such personal opinions were informative, non-principles and appropriate mathematics used by	I ones) • the reviewer's persona trivial and demonstrated, where	al opinion was in e possible, the re	evidence (not just superficial	observations) a
The grade for each of the three teams co The <i>reporter</i> , <i>opponent</i> and <i>reviewer</i> ea Consider the following <i>suggestions</i> to <i>ad</i> Select each partial grade from each section Don't punish missing 'answers' when no	ch <i>start with 5 points.</i> I d to or <i>deduct</i> from the inition on and <i>write it</i> in the corresp	al 5 points . oonding box.		
ep.: GERHANY 5	Opp.: AUSTRALIA	5	Rev.: CHINA	5
nysics ±3	Physics ±3	+5	Physics ±3	4 /
Correct and relevant physics	☐ Correct and relevant	ohysics	☐ Correct and relevan	nt physics

Keb.: Ockillia	Obb: VO SIEVELY	Rev.: CHINA
5	5	5
Physics ±3	Physics ±3 + 5	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 + .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 archive your partial grades – please
Contribution to the discussion	\ i	to met hand

Final Grade: Opponent