		Fight /F	Sound no )	. 5	Poor	·	S+2001	( Dre	oblem no.:
Scoring Guideling	nes							<u></u> Pro	obiem no.:/)
		Juror: _	Chuom	(of		Signatu	re: <u>//</u>		f C:
A report should include:									
• a presentation of the appropriate concepapplication of appropriate mathematics • reappropriate) • linking of theoretical and ecomplex ideas in an effective and understan	easo <mark>na</mark> ble e: Experimenta	kperimen: I findings	tal techniqu	ie to gat	her and r	e <mark>cord data</mark>	(or demon	strate the	phenomena if
An opposition should show that: • the opponent challenged the reporter's unappropriate mathematics presented • the opponent appreciated and highlighted the st	nderstandin pponent <i>crit</i>	<i>iqued</i> the	experimen	tal techn	t <b>heories</b> a <b>ique</b> use	and <i>princip</i> d and quest	les • the o	pponent u validity of	inderstood the the data • the
A review should show that:		-							
<ul> <li>the reviewer succeeded in giving an object important aspects (especially the controvers such personal opinions were informative, no principles and appropriate mathematics use</li> </ul>	sial ones) • : • <b>n-trivial</b> and	the review 1 demonst	ver's <i>persor</i> trated, whe	n <mark>al opinio</mark> re possib	n was in	evidence (	not just sui	perficial o	hservations) .
<ul> <li>The grade for each of the three teams</li> <li>The reporter, opponent and reviewer of Consider the following suggestions to Select each partial grade from each section Don't punish missing 'answers' when not consider the following suggestions to select each partial grade from each section.</li> </ul>	each <i>start</i> เ <i>add</i> to or a ction and พ	<b>vith 5 pc</b> leduct fro vrite it in	oints. om the init the corres	ial <i>5 poi</i> ponding	nts. ; box.				
<b>Rep.:</b>	Орр.	: Sin	gapore		5	Rev.:	Bul	gan	<u>a</u> 5
Physics ±3 +0.5	Physic	·			+15	nh			+2
☐ Correct and relevant physics	1		l relevant	L		Physic			
Scientific approach			proach	physics	•		rect and entific app		physics
☐ Validity of conclusions	i i		onclusion	าร		1	dity of co		nc
☐ Accurate answers	☐ Acc	urate an	iswers				urate ans		
Presentation ±1	Prese	ntation	1 ±1		0	Prese	ntation	<b>±1</b>	0
Clear and understandable	☐ Clea	ır and uı	nderstand	lable		☐ Clea	ar and un	derstand	dable
☐ Appropriate manner	1		manner				ropriate		
Overall impression	│□ Ove	rall impi	ression	-		∐ Ove	rall impre	ession	
Reporter ±1	Oppor	nent ±:		+	2.50	Revie	wer±1		405
U Quality of experimental technique(s)	Resp Resp Solu	onse to tion	the repo	rter's		Prov repo	vides a th ort and di	orough scussion	review of
<ul><li>☑ Structure</li><li>☑ Explanation of formulae and</li></ul>	Show of the	ws the si ie repor	trong and t	weak p	oints	Expi topi	esses ow cs presen	n opinic ited or d	on about liscussed
symbols  Appropriate models, conformity	Find the i	s shortc eport	omings o	rerrors	in	☐ Rele	vance of orter and	question the opp	ns to both the onent
of dimensions  Slides, on-site experiments, audio,			f the ques I to the di			☐ Drav	vs attenti ne report	ion to po er or the	oints missed opponent
video, as appropriate  References, proper citations of	LI CONT	nouuun	i to the di	scussio	has a				
ideas and input of others					deaderoom a Galaciana de grafega es			CA WAR CO	cted by the n scan it and
Novelty of the report						aro	hive your i	partial gra	des – piease
Contribution to the discussion				griionnas	- Control Control	do	not bend		
Final Grade: Reporter	Fin <b>al</b> Gr	ade: Op	ponent		Revised a	Final G	rade: Rev Iback and ap	iewer proved by I	EC on 2011-11-03

Scaring Guidali		n: F Stage: Problem no.:				
Scoring Guideli	nes Juror: Jürgen Dust	Signature: Dunt				
A report should include:						
application of appropriate mathematics •	epts, theories and principles of the problem • an ereasonable 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  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 d 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 reset by the reporter and the opponent	evidence (not just superficial observations)				
The <i>reporter</i> , <i>opponent</i> and <i>reviewe</i> Consider the following <i>suggestions</i> to Select each partial grade from each s	s consists of a partial grade for <i>physics, present</i> reach start with 5 points. The add to or deduct from the initial 5 points. The ection and write it in the corresponding box. The no questions were posed or not finding shorter					
Rep.: <u>U. II.</u> 5	Opp.: Singapore 5	Rev.: Bilgaria 5				
Physics ±3 $-13$	Physics ±3 +175	Physics ±3 +4,5				
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				
resentation ±1	Presentation ±1 +015	Presentation ±1				
Clear and understandable	☐ Clear and understandable	☐ Clear and understandable				
Appropriate manner	☐ Appropriate manner	☐ Appropriate manner				
Overall impression	☐ Overall impression	Overall impression				
eporter ±1	Opponent ±1 +975	Reviewer ±1 +QZ				
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 of dimensions

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

References, proper citations of ideas and input of others

☐ Contribution to the discussion

Novelty of the report

Final Grade: Reporter

☐ Relevance of the questions
☐ Contribution to the discussion
☐ This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades — please

Finds shortcomings or errors in

the report

Final Grade: Opponent

do not bend

Final Grade: Reviewer

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

Relevance of questions to both the reporter and the opponent

	Fight (Round no.): 5 Room	m: F Stage: 1 Problem no.:
Scoring Guideli	nes  Juror: I. Gachechilae	,,,
application of appropriate mathematics •	ots, 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 phenomena if
An opposition should show that • the opponent challenged the reporter's u appropriate mathematics presented • the o opponent appreciated and highlighted the s	inderstanding of the presented concepts, theories apponent critiqued the experimental technique use	and <i>principles</i> • the opponent understood the 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 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) *
<ul> <li>The reporter, opponent and reviewer</li> <li>Consider the following suggestions to</li> <li>Select each partial grade from each se</li> </ul>	consists of a partial grade for <i>physics</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 shortons.	
<b>Rep.:</b>	Opp.: Singapure 5	Rev.: Bulgaria 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
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
Structure	Shows the strong and weak points	report and discussion  Expresses own opinion about
Explanation of formulae and symbols	of the report  Finds shortcomings or errors in	topics presented or discussed  Relevance of questions to both the
Appropriate models, conformity of dimensions	the report  Relevance of the questions	reporter and 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
Novelty of the report		This sheet will be common than 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	Final Grade: Reviewer after IOC feedback and approved by EC on 2011-11-03

			<b>(3)</b>					2	7 8	7	á	1 4	9			rigi
٥	CO	r		7	g	G	U		a	e		Control of the last of the las	Control of the Contro	e	5	
																lur

Fight (Round no.): 5 Room:	Stage	e: Problem no.:	1
Juror: X. Valeraus	Signature:	L' Vatalaus	

Final Grade: Reviewer

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

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

#### An opposition should show that:

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

#### A review should show that:

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

	ction and <i>write it</i> in the corresponding box. no questions were posed or not finding shortc	omings if there were none to find.
<b>Rep.:</b> 5	<b>Opp.:</b> 5	<b>Rev.:</b> 5
Physics ±3	Physics ±3 +2	Physics ±3
Correct and relevant physics	Correct and relevant physics	Correct and relevant physics
✓ Scientific approach	Scientific approach	Scientific approach
√□ Validity of conclusions	Validity of conclusions	Validity of conclusions
Accurate answers	Accurate answers	Accurate answers
Presentation ±1	Presentation ±1	Presentation ±1
Clear and understandable	Clear and understandable	Clear and understandable
Appropriate manner	Appropriate manner	Appropriate manner
Overall impression	Overall impression	Overall impression
Reporter ±1	Opponent ±1	Reviewer ±1
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
Structure	Shows the strong and weak points of the report	Expresses own opinion about topics presented or discussed
Explanation of formulae and symbols	Finds shortcomings or errors in	Relevance of questions to both the
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 can archive your partial grades – please
Contribution to the discussion		do not bend
Final Grade: Reporter	Final Grade: Opponent	Final Grade: Reviewer

	money	
Scaring Cuidali	Fight (Round no.): Roo	m: F Stage: Problem no.:
Scoring Guideling	1es Juror: A. NADOLNY	Signature:fhully
application of appropriate mathematics • r	easonable <b>experimental techniqu</b> e to <i>gather</i> and experimental findings to draw suitable conclusi	explanation of the observed phenomena • an record data (or demonstrate the phenomena if fons • 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 st	nderstanding of the presented concepts, theories pponent 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 controvers	sial ones) • the reviewer's personal opinion was on-trivial and demonstrated, where possible, the	r and opponent • the reviewer appreciated the in evidence (not just superficial observations) • reviewer's understanding of concepts, theories,
<ul> <li>The reporter, opponent and reviewer</li> <li>Consider the following suggestions to</li> <li>Select each partial grade from each sec</li> </ul>	consists of a partial grade for <i>physics, preser</i> each <i>start with 5 points</i> .  add to or deduct from the initial 5 points.  ction and write it in the corresponding box.  to questions were posed or not finding shorte	
Rep.: <u>UK</u> 5	Opp.: Singapore 5	Rev.: Bulgania 5
Physics ±3	Physics ±3 + 1	Physics ±3
<ul><li>☐ Correct and relevant physics</li><li>☐ Scientific approach</li><li>☐ Validity of conclusions</li><li>☐ Accurate answers</li></ul>	☐ Correct and relevant physics ☐ Scientific approach ☐ Validity of conclusions ☐ Accurate answers	☐ Correct and relevant physics ☐ Scientific approach ☐ Validity of conclusions ☐ Accurate answers
Presentation ±1	Presentation ±1 0,5	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	Shows the strong and weak points	Expresses own opinion about topics presented or discussed
Explanation of formulae and symbols	of the report  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		archive your partial Brades
☐ Contribution to the discussion		do not bend

Final Grade: Reporter

Final Grade: Opponent

Final Grade: Reviewer

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

# Scoring Guidelines

# 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

<ul> <li>Select each partial grade from each section and write it in the corresponding box.</li> <li>Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.</li> </ul>							
Rep.:	Opp.: SINGAPORE 5	Rev.: BUIGARIA 5					
Physics ±3	Physics ±3 +1,2	Physics ±3					
↑ ☐ Correct and relevant physics	Correct and relevant physics	Correct and relevant physics					
☐ Scientific approach	<b>1 □ + S</b> cientific approach	☐ Scientific approach					
☐ Validity of conclusions	☐ Validity of conclusions	□-Nalidity of conclusions					
←□ †Accurate answers	☐ Accurate answers	☐ Accurate answers					
Presentation ±1 $-\delta (15)$	Presentation ±1	Presentation ±1					
☐ Clear and understandable	☐ Clear and understandable	☐ Clear and understandable					
☐ Appropriate manner	Appropriate manner	☐ Appropriate manner					
Overall impression	Overall impression	Overall impression					
Reporter ±1	Opponent ±1	Reviewer ±1					
<ul><li>Quality of experimental technique(s)</li></ul>	Response to the reporter's solution	Provides a thorough review of report and discussion					
☐ Structure	Shows the strong and weak points	Expresses own opinion about					
☐ Explanation of formulae and	of the report	topics presented or discussed					
symbols  Appropriate models, conformity	Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent					
of dimensions	↑□ Relevance of the questions	☐ Draws attention to points missed					
Slides, on-site experiments, audio, video, as appropriate	Contribution to the discussion	by the reporter or the opponent					
References, proper citations of ideas and input of others		This sheet will be collected by the					

Final Grade: Reporter

☐ Novelty of the report

 $+\Box$  Contribution to the discussion

Final Grade: Opponent

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

archive your partial grades – please

•		Fight (Round no.): _
Scoring	Guidelines	Juror: Chuan T

or: Chian Top Li Signature: Chian Top Li

## 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

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#### 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.: Singapore 5	Opp.: Balgaria 5	<b>Rev.:</b>				
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				
Presentation ±1	Presentation ±1 v. ∫  ☐ 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				
Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	by the reporter or the opponent				
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and				
☐ Novelty of the report		archive your partial grades				
Contribution to the discussion		do not bend				
	P					

Final Grade: Reviewer

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

		Fight (Round no.):	Room:	Stage:	
Scoring	Guidelines	Juror: Jurgen	Durst	Signature:	Da

Ar	ep	ort	sho	uld	in	clu	de:	
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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

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<ul> <li>Consider the following suggestions to add to or deduct from the initial 5 points.</li> <li>Select each partial grade from each section and write it in the corresponding box.</li> <li>Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.</li> </ul>									
Rep.: Sing a pore 5	Opp.: Bulgaria 5	<b>Rev.:</b> <i>u. K.</i> 5							
Physics ±3	Physics ±3 +125	Physics ±3 +1,5							
Correct and relevant physics	☐ Correct and relevant physics	☐ Correct and relevant physics							
Scientific approach	☐ Scientific approach	☐ Scientific approach							
☐ Validity of conclusions	☐ Validity of conclusions								
☐ Accurate answers	☐ Accurate answers	☐ Accurate answers							
Presentation ±1 + 1	Presentation ±1 +1	Presentation ±1							
degree Clear and understandable	E Clear and understandable	☐ Clear and understandable							
△ Appropriate manner	☐ Appropriate manner	☐ Appropriate manner							
① Overall impression	☐ Overall impression	☐ Overall impression							
Reporter ±1 + 1	Opponent ±1	Reviewer ±1							
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion							
		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 have 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

Problem no.:

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Final Grade: Reporter

☐ Contribution to the discussion

Scoring Guidelir	Fight (Round no.): Roor	n: F Stage: 2 Problem no.: 5				
Scoring Guideni	Juror: T. Gachechiladz	E Signature: C. Phyly				
application of appropriate mathematics • re	ts, theories and principles of the problem • an experimental technique to gather and experimental findings to draw suitable conclusionable manner	record data (or demonstrate the phenomena if				
An opposition should show that: • the opponent challenged the reporter's un appropriate mathematics presented • the opponent appreciated and highlighted the str	nderstanding of the presented concepts, theories oponent critiqued the experimental technique use 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 in n-trivial and demonstrated, where possible, the refit by the reporter and the opponent	revidence (not just superficial observations)				
<ul> <li>The reporter, opponent and reviewer e</li> <li>Consider the following suggestions to a</li> <li>Select each partial grade from each sec</li> </ul>	consists of a partial grade for <i>physics, presen</i> teach start with 5 points.  add to or deduct from the initial 5 points.  Ition and write it in the corresponding box.  It o questions were posed or not finding shortco					
Rep.: Singapure 5	Opp.: Bulgaria 5	<b>Rev.:</b>				
Physics ±3	Physics ±3	Physics ±3				
Correct and relevant physics	☐ Correct and relevant physics	☐ Correct and relevant physics				
☐ Scientific approach	☐ Scientific approach	☐ Scientific approach				
☐ Validity of conclusions	☐ Validity of conclusions	☐ Validity of conclusions				
Accurate answers	☐ Accurate answers	☐ Accurate answers				
Presentation ±1	Presentation ±1	Presentation ±1				
Clear and understandable	Clear and understandable	☐ Clear and understandable				
Appropriate manner	Appropriate manner	☐ Appropriate manner				
Overall impression	☐ Overall impression	Overall impression				
Reporter ±1	Opponent ±1	Reviewer ±1				
<ul> <li>Quality of experimental technique(s)</li> </ul>	Response to the reporter's solution	Provides a thorough review of report and discussion				
☐ Structure	☐ Shows the strong and weak points	Expresses own opinion about				
Explanation of formulae and 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  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				
☐ Novelty of the report		This sheet will be each 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

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

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Scoring Guidelines	Fight (Round no.): Room: Stage: Problem no.: 5  Juror: Valencus Signature: Valuation
A report should include:	
application of appropriate mathematics • reasonable	ies and principles of the problem • an explanation of the observed phenomena • an experimental technique to gather and record data (or demonstrate the phenomena if intal findings to draw suitable conclusions • an attempt to communicate difficult or inner
An opposition should show that:	
• the opponent challenged the reporter's understand	ding of the presented concepts, theories and principles • the opponent understood the critiqued the experimental technique used and questioned the validity of the data • the and weaknesses of the report
A review should show that:	
important aspects (especially the controversial ones)	mary of the performances the reporter and opponent • the reviewer appreciated the • the reviewer's personal opinion was in evidence (not just superficial observations) • and demonstrated, where possible, the reviewer's understanding of concepts, theories, reporter and the opponent
The grade for each of the three teams consists The reporter, opponent and reviewer each star	of a partial grade for <i>physics</i> , <i>presentation</i> and for their <i>specific role</i> .  rt with 5 points.

## A review should show that:

- the reviewer succeeded in giving an objective summ important aspects (especially the controversial ones) • such personal opinions were informative, non-trivial ar principles and appropriate mathematics used by the re-
- The grade for each of the three teams consists of
- The reporter, opponent and reviewer each start
- Consider the following suggestions to add to or deduct from the initial 5 points

<ul> <li>Select each partial grade from each sec</li> </ul>	tion and write it in the corresponding box.  o questions were posed or not finding shortco	omings if there were none to find.
Rep.:	<b>Opp.:</b> 5	<b>Rev.:</b> 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 $\pm 1$	Presentation ±1	Presentation ±1
Clear and understandable	Clear and understandable	Clear and understandable
Appropriate manner	Appropriate manner	Appropriate manner
Overall impression	Overall impression	Overall impression
Reporter ±1	Opponent ±1	Reviewer ±1
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
Structure  Explanation of formulae and	Shows the strong and weak points of the report	Expresses own opinion about topics presented or discussed
symbols	Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent
Appropriate models, conformity of dimensions	Relevance of the questions	Draws attention to points missed by the reporter or the opponent
Slides, on-site experiments, audio, video, as appropriate	Contribution to the discussion	
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and
Novelty of the report		archive your partial grades
Contribution to the discussion		do not bend
Final Grade: Reporter	Final Grade: Opponent	Final Grade: Reviewer

	•	
	Fight (Round no.):5 Room	: _ F _ Stage: _ 2 Problem no.: _ 5
Scoring Guideling	1es Juror: A. NADOLNY	Signature:
A report should include:		
1	ts, theories and principles of the problem $ullet$ an $e$	xplanation of the observed phenomena • an
application of appropriate mathematics • re	asonable experimental technique to gather and r experimental findings to draw suitable conclusion	ecord data (or demonstrate the phenomena if
An opposition should show that:		
<ul> <li>the opponent challenged the reporter's unappropriate mathematics presented • the opponent appreciated and highlighted the state</li> </ul>	nderstanding of the presented concepts, theories a oponent critiqued the experimental technique used rengths and weaknesses of the report	and <i>principles</i> • the opponent understood the d and questioned the <i>validity</i> of the <i>data</i> • the
A review should show that:		
• the reviewer succeeded in giving an object	tive summary of the performances the reporter a	and opponent • the reviewer appreciated the
such personal opinions were informative, no	ial ones) • the reviewer's personal opinion was in n-trivial and demonstrated, where possible, the re	evidence (not just superficial observations) • viewer's understanding of concepts, theories,
principles and appropriate mathematics used	d by the reporter and the opponent	
The grade for each of the three teams	consists of a partial grade for <i>physics, present</i>	ation and for their specific role.
<ul> <li>The reporter, opponent and reviewer expenses</li> </ul>	each <i>start with 5 points</i> .	• •
	add to or deduct from the initial 5 points. etion and write it in the corresponding box.	
	o questions were posed or not finding shortco	omings if there were none to find.
0	7	1
Rep.: Singapore 5	Opp.: Bulgaria 5	Rev.: <i>UK</i> 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
$\square$ Clear and understandable	☐ Clear and understandable	☐ Clear and understandable
Appropriate manner	☐ Appropriate manner	☐ Appropriate manner
Overall impression	Overall impression	Overall impression
Reporter ±1	Opponent ±1	Reviewer ±1
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
Structure	Shows the strong and weak points of the report	Expresses own opinion about
<ul><li>Explanation of formulae and symbols</li></ul>	☐ 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

Final Grade: Reporter Final Grade: Opponent

References, proper citations of ideas and input of others

 $\hfill\Box$  Contribution to the discussion

☐ Novelty of the report

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

do not bend

This sheet will be collected by the

fight assistant, so we can scan it and archive your partial grades - please

Scoring Guideli	nes
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Fight (Round no.):	Room:	_ Stage:	Problem no.: _	5
Juror: CHUNG BYCHE	字句のN Signatu	re: <u>И и</u>	- 11	٩

## 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

	and one opponent	
<ul> <li>The reporter, opponent and reviewer</li> <li>Consider the following suggestions to</li> <li>Select each partial grade from each se</li> </ul>	s 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> . ection and <i>write it</i> in the corresponding box. no questions were posed or not finding shorte	
Rep.: SINGAPORE 5	Opp.: BYLGARTA 5	Rev.: 15
Physics ±3	Physics ±3	Physics ±3
Correct and relevant physics	Correct and relevant physics	Correct and relevant physics
-□ Scientific approach	Scientific approach (+1)	Scientific approach
Validity of conclusions	Validity of conclusions	☐-Walidity 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 (+0.6)	Appropriate manner	☐ ‡Appropriate manner
Overall impression	Overall impression	Overall impression
Reporter ±1	Opponent ±1	Reviewer ±1
Quality of experimental ( o sq 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	Relevance of questions to both the
Appropriate models, conformity of dimensions	the report Relevance of the questions	reporter and the opponent
Slides, on-site experiments, audio, video, as appropriate		by the reporter or the opponent
References, proper citations of ideas and input of others	L2 E	This sheet will be collected by the fight assistant, so we can scan it and
$\square$ Novelty of the report $426$	(+2±3)	fight assistant, so the 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

	Fight (Round no.): Room:	Stage: Problem no.:
Scoring Guidelines	Juror: Chuan Tore Li Signature	: Chapli
	8	

## 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

	tion and write it in the corresponding box. o questions were posed or not finding shortco	omings if there were none to find.
Rep.: Bulgania 5	Opp.: 5	Rev.: Singapone 5
Physics ±3	Physics ±3	Physics ±3 +2
Correct and relevant physics	Correct and relevant physics	Correct and relevant physics
Scientific approach	Scientific approach	Scientific approach
☐ Validity of conclusions	☐ Validity of conclusions	☐ Validity of conclusions
☐ Accurate answers	☐ Accurate answers	☐ Accurate answers
Presentation ±1	Presentation ±1	Presentation ±1
☐ Clear and understandable	☐ Clear and understandable	☐ Clear and understandable
☐ Appropriate manner	☐ Appropriate manner	☐ Appropriate manner
Overall impression	☐ Overall impression	☐ Overall impression
Reporter ±1	Opponent ±1	Reviewer ±1 +/
☐ Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
☐ Structure	Shows the strong and weak points	Expresses own opinion about topics presented or discussed
☐ 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 define 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

		<i>C</i> 2
Scoring Guideli	nes  Juror: 15 gen Dust	m:F Stage:3_ Problem no.: Signature:
A report should include:		
application of appropriate mathematics •	ots, 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 phenomena if
An opposition should show that • the opponent challenged the reporter's u appropriate mathematics presented • the o opponent appreciated and highlighted the s	inderstanding of the presented concepts, theories apponent critiqued the experimental technique us	and <i>principles</i> • the opponent understood the ed and questioned the <i>validity</i> of the <i>data</i> • the
A review should show that:		
important aspects (especially the controver	ctive summary of the performances the reporter rsial ones) • the reviewer's personal opinion was in contrivial and demonstrated, where possible, the read by the reporter and the opponent	n evidence (not just superficial observations) a
<ul> <li>The reporter, opponent and reviewer</li> <li>Consider the following suggestions to</li> <li>Select each partial grade from each se</li> </ul>	consists of a partial grade for <i>physics, presen</i> each <i>start with 5 points</i> . <i>add</i> to or <i>deduct</i> from the initial <i>5 points</i> .  action and <i>write it</i> in the corresponding box.  no questions were posed or not finding shorte	
Rep.: Bolgaria 5	<b>Орр.:</b> <u>и. к.</u> <u>5</u>	Rev.: Singapore 5
Physics ±3	Physics ±3	Physics ±3 +10
☐ 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 +0.1	Opponent ±1 +0,7	Reviewer ±1 +95
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
Structure	Shows the strong and weak points of the report	Expresses own opinion about topics presented or discussed
Explanation of formulae and symbols	☐ Finds shortcomings or errors in	Relevance of questions to both the
Appropriate models, conformity 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

Final Grade: Opponent

References, proper citations of ideas and input of others

☐ 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

This sheet will be collected by the

fight assistant, so we can scan it and archive your partial grades - please

		Rej.4		
	Fight (Round no.): Roon	n: F Stage: 3 Problem no.: 8		
Scoring Guideling	1es Juror: T. Gachechilad	26Signature: 0. 28/2/		
application of appropriate mathematics • re	ts, theories and principles of the problem • an exaconable experimental technique to gather and a experimental findings to draw suitable conclusionable manner	record data (or demonstrate the phenomena if		
An opposition should show that:  • the opponent challenged the reporter's un	derstanding of the presented concepts, theories opponent critiqued the experimental technique use	and <i>principles</i> • the opponent understood the d and questioned the <i>validity</i> of the <i>data</i> • the		
important aspects (especially the controvers	tive summary of the performances the reporter ial ones) • the reviewer's personal opinion was in n-trivial and demonstrated, where possible, the real by the reporter and the opponent	evidence (not just superficial observations) •		
<ul> <li>The reporter, opponent and reviewer of the consider the following suggestions to consider the following suggestions to consider the following suggestions to consider the following suggestions.</li> </ul>	consists of a partial grade for <i>physics, present</i> each <i>start with 5 points</i> .  add to or <i>deduct</i> from the initial <i>5 points</i> .  Ition and <i>write it</i> in the corresponding box.  To questions were posed or not finding shortco			
Rep.: Bulgaria 5	Opp.: <u>UK</u> 5	Rev.: Singapure 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		
3 Structure	Shows the strong and weak points	Expresses own opinion about		
Explanation of formulae and symbols	of the report	topics presented or discussed		
Appropriate models, conformity	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		
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		
Final Grade: Reporter	Final Grade: Opponent	Final Grade: Reviewer		

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

Physics ±3

Presentation ±1

Reporter ±1

☐ Structure

References, proper citations of ideas and input of others

Contribution to the discussion

☐ Novelty of the report

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<b>%</b>		M		B	1		- H	48500	Ø	鏖	ä		6	ı	8	200		1	-
	CO			H	Ø	u	4		L	#		M	C	Ø	ø	H I	į.	Proces.	J)
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	I		
Fight (Round no.): R	oom: Sta	nge: 🥒 Problem	no.:
Juror: X-Vaterlaw	Signature:	V. Valu	laul

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

#### An opposition should show that:

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

#### A review should show that:

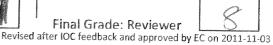
- the reviewer succeeded in giving an objective summary of the performances the reporter and opponent the reviewer appreciated the important aspects (especially the controversial ones) • the reviewer's personal opinion was in evidence (not just superficial observations) • such personal opinions were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

bon c punish missing answers when h	o questions were posed or not finding shortco	omings if there were none to find.
<b>Rep.:</b> 5	Opp.:5	<b>Rev.:</b> 5
Physics ±3	Physics ±3	Physics ±3 +/
Correct and relevant physics	Correct and relevant physics	☐ Correct and relevant physics
C 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	Relevance of questions to both the
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 are fight assistant as a fight assistant as a fight assistant as a fight assistant as a fight a
☐/ Contribution to the discussion		do not bend

Final Grade: Reporter Final Grade: Opponent

Contribution to the discussion

Final Grade: Reviewer



Scoring Guidelines	Fight (Round no.): 5 Room: F Stage: 3 Problem no.: 8  Juror: A. NADOLNY Signature:
application of appropriate mathematics • reasonable	es and principles of the problem • an explanation of the observed phenomena • an experimental technique to gather and record data (or demonstrate the phenomena if tal findings to draw suitable conclusions • an attempt to communicate difficult or the order of the communicate difficult or the communicate di
An opposition should show that: • the opponent challenged the reporter's understanding appropriate mathematics presented • the opponent cropponent appreciated and highlighted the strengths and	ing of the presented concepts, theories and principles • the opponent understood the critiqued the experimental technique used and questioned the validity of the data • the and weaknesses of the report
important aspects (especially the controversial ones) •	nary of the performances the reporter and opponent • the reviewer appreciated the • the reviewer's personal opinion was in evidence (not just superficial observations) • and demonstrated, where possible, the reviewer's understanding of concepts, theories, porter and the opponent
The <i>reporter</i> , <i>opponent</i> and <i>reviewer</i> each <i>start</i> Consider the following <i>suggestions</i> to <i>add</i> to or Select each partial grade from each section and	deduct from the initial 5 points.
Rep.: Bulgaria 5 Opp	:: UK 5 Rev.: Singapore 5

_	, , , , , , , , , , , , , , , , , , , ,	our go it there were none to mia.
Rep.: Bulgaria 5	<b>Opp.:</b> <u>UK</u> 5	Rev.: Singapore 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
		L Overall IIIIble221011
Reporter ±1	Opponent ±1	Reviewer ±1
Reporter ±1	Opponent ±1  Response to the reporter's solution  Shows the strong and weak points	Reviewer ±1  Provides a thorough review of report and discussion
Reporter ±1  Quality of experimental technique(s)  Structure  Explanation of formulae and	Opponent ±1  Response to the reporter's solution	Reviewer ±1  Provides a thorough review of report and discussion
Reporter ±1  Quality of experimental technique(s)  Structure  Explanation of formulae and symbols	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)  Structure  Explanation of formulae and	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  Relevance of questions to both the reporter and the opponent  Draws attention to points missed
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  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	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

Final Grade: Opponent

Final Grade: Reporter

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

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Scoring Guidelia	n	<i>es</i>
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Fight (Round no.):	_Room: Stage:	_3 Problem no.: $\&$
Juror: CHANG 1XU	164100 Signature:	u dry

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

such personal opinions were informative, no principles and appropriate mathematics use	on-trivial and demonstrated, wher	e possible, the r	n evidence ( <b>not</b> just s <b>uperficial o</b> eviewer's <b>understanding</b> of <b>conc</b>	bservations) • epts, theories,
<ul> <li>The grade for each of the three teams</li> <li>The reporter, opponent and reviewer</li> <li>Consider the following suggestions to</li> <li>Select each partial grade from each see</li> <li>Don't punish missing 'answers' when respect to the partial grade from each see</li> </ul>	each start with 5 points. add to or deduct from the initi ction and write it in the corresp	al <i>5 points</i> . Donding box.		
Rep.: BULGARIA 5	Opp.: <u>UK</u>	5	Rev.: Singapor	5
Physics ±3	Physics ±3	+200	Physics ±3	E65
Correct and relevant physics	☐ €orrect and relevant physics		Correct and relevant physics	
Scientific approach	Scientific approach		Scientific approach	
☐ Validity of conclusions	→ Validity of conclusion	5	☐ Validity of conclusion	าร
Accurate answers	Accurate answers		☐ \Accurate answers	
Presentation ±1	Presentation ±1	+0.3	Presentation ±1	40,15
Clear and understandable	☐ €lear and understandable		□ <del>Clear and understandable</del>	
Appropriate manner	Appropriate manner		☐ \Appropriate manner	
Overall impression	Overall impression		Overall impression	
Reporter ±1	Opponent ±1	+0.9	Reviewer ±1	t(.0
Quality of experimental technique(s)	Response to the reporter's solution		Provides a thorough review of report and discussion	
☐ Structure	Shows the strong and weak points		Expresses own opinion about	
Explanation of formulae and	of the report		topics presented or discussed	
symbols  Appropriate models, conformity	Finds shortcomings or errors in the report		Relevance of questions to both the reporter and the opponent	
of dimensions	Relevance of the questions		Draws attention to points missed by the reporter or the opponent	
Slides, on-site experiments, audio, video, as appropriate	☐—€ontribution to the discussion			
References, proper citations of ideas and input of others			This sheet will be colle	cted by the
□ Novelty of the report (+1.4)			fight assistant, so we co archive your partial gra	des - please
☐ Contribution to the discussion		+32	do not bend	t 45
Final Grade: Reporter	Final Grade: Opponent	8	Final Grade: Reviewer	8