5	CC) [a	(G	U		d	e	Median o	n	ie	'S
delite.	distribution of the second	- 22	200	202	82			ANDERS		8	(1) A	CONTRACTOR OF THE PARTY OF THE	8	3 E	No.	

Fight (Round no.): _	<u> 2</u> Room: <u>B</u>	Stage: <u> </u>	Problem no:
Juror: Loby	Shew Signat	ure:	MIL

• 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 	o questions were posed or not finding shortco	omings if there were none to find.
Rep.: 5	Opp.: 5	Rev.: 5
Physics ±3	Physics ±3	Physics ±3
Correct and relevant physics	☐ Correct and relevant physics	☐ Correct and relevant physics
Scientific approach	☐ Scientific approach	☐ Scientific approach
☐ Validity of conclusions	☐ Validity of conclusions	☐ Validity of conclusions
☐ Accurate answers	☐ Accurate answers	☐ Accurate answers
Presentation ±1	Presentation ±1	Presentation ±1
☐ Clear and understandable	☐ Clear and understandable	☐ Clear and understandable
☐ Appropriate manner	☐ Appropriate manner	☐ Appropriate manner
Overall impression	Overall impression	☐ Overall impression
Reporter ±1	Opponent ±1	Reviewer ±1
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
☐ Structure	☐ Shows the strong and weak points	Expresses own opinion about
☐ Explanation of formulae and	of the report	topics presented or discussed
symbols Appropriate models, conformity	Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent
 Appropriate models, conformity of dimensions 	☐ Relevance of the questions	☐ Draws attention to points missed
Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	by the reporter or the opponent
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report		archive your partial glades
Contribution to the discussion		do not bend
-		grinteness continuo y mantana na que

Final Grade: Opponent

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

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						Character 1										

Rep.: Slovalia

☐ Correct and relevant physics

Clear and understandable introduction

☐ Validity of conclusions

☐ Accurate answers

Presentation ±1

Appropriate manner

Quality of experimental

☐ Appropriate models, conformity

☐ Slides, on-site experiments, audio,

References, proper citations of ideas and input of others

Overall impression

☐ Novelty of the report

Reporter ±1

☐ Structure

Physics ±3

	Fight (Round no.): 2 Room	n: Stage: Problem no.:
Scoring Guideling	nes Juror: <u>Vlaus Roller</u>	_ Signature:
application of appropriate mathematics • r	ets, theories and principles of the problem • an eleasonable 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 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
A review should show that: • the reviewer succeeded in giving an object important aspects (especially the controvers)	ctive summary of the performances the reporter sial ones) • the reviewer's personal opinion was in en-trivial and demonstrated, where possible, the r	evidence (not just superficial observations)
Consider the following suggestions to Select each partial grade from each see Don't punish missing 'answers' when r	consists of a partial grade for <i>physics</i> , <i>presen</i> each <i>start with 5 points</i> . add to or <i>deduct</i> from the initial <i>5 points</i> . ction and <i>write it</i> in the corresponding box. to questions were posed or not finding shortc	
hysics ±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
resentation ±1 + 1 Clear and understandable inholes of the control of the contro	Presentation ±1 Clear and understandable Appropriate manner	Presentation ±1 ☐ Clear and understandable ☐ Appropriate manner
eporter ±1	Opponent ±1	Overall impression Reviewer ±1
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
Structure	Shows the strong and weak points of the report	Expresses own opinion about
Explanation of formulae and symbols	Finds shortcomings or errors in	topics presented or discussed Relevance of questions to both the
Appropriate models, conformity of dimensions	the report Relevance of the questions	reporter and the opponent Draws attention to points missed
Slides, on-site experiments, audio, video, as appropriate	Contribution to the discussion	by the reporter or the opponent
References, proper citations of ideas and input of others		This sheet will be collected by the
Novelty of the report		This sheet will be considered it and fight assistant, so we can scan it and archive your partial grades – please

Contribution to the discussion Final Grade: Reporter

Final Grade: Opponent

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

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Carina	Cilidalina	Fight (Round no.): Roo	m: Stage: _
JUINIY	Guidelines	luror Tan Jay	Signature:

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

An opposition should show that:

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

A review should show that:

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

 Select each partial grade from each see Don't punish missing 'answers' when r 	ction and write it in the corresponding box. no questions were posed or not finding shortco	omings if there were none to find.
Rep.: Slovakia 5	Opp.: Taipei 5	Rev.: Pland. 5
Physics ±3	Physics ±3	Physics ±3
☐ Correct and relevant physics	☐ Correct and relevant physics	☐ Correct and relevant physics
☐ Scientific approach	☐ Scientific approach	☐ Scientific approach
☐ Validity of conclusions	☐ Validity of conclusions	☐ Validity of conclusions
☐ Accurate answers	☐ Accurate answers	☐ Accurate answers
Presentation ±1	Presentation ±1	Presentation ±1
☐ Clear and understandable	☐ Clear and understandable	☐ Clear and understandable
☐ Appropriate manner	☐ Appropriate manner	☐ Appropriate manner
Overall impression	☐ Overall impression	☐ Overall impression
Reporter ±1	Opponent ±1	Reviewer ±1
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
☐ Structure	☐ Shows the strong and weak points	Expresses own opinion about
☐ Explanation of formulae and	of the report	topics presented or discussed
symbols Appropriate models, conformity	Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent
of dimensions	\square 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
\square Novelty of the report		fight assistant, so we con archive your partial grades – please
Contribution to the discussion		do not bend
and the state of t	Surviy	promised control of the control of t

Final Grade: Opponent

	Fight (Round no.)	: Roor	m: _ 🗸 _ Stage: _ 3 _ Pro	blem no.:/
Scoring Guideli	nes Juror: PHILL C	D'NEILL	Signature: Mgg-A	llail
A report should include:	[*/M/Fa-//www.se-se-se-se-se-se-se-se-se-se-se-se-se-s		/	
a presentation of the appropriate conception application of appropriate mathematics of appropriate) inking of theoretical and complex ideas in an effective and understant	reasona ble experimental techniq u <i>experimental findings</i> to draw <i>s</i>	e to <i>gather</i> and	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	anderstanding of the presented co	tal technique use	and <i>principles</i> • the opponent ured and questioned the <i>validity</i> of t	nderstood the he <i>data</i> • the
A review should show that: • the reviewer succeeded in giving an obje important aspects (especially the controver such personal opinions were informative, no principles and appropriate mathematics use	rsial ones) • the reviewer's <i>persor</i> on-trivial and demonstrated, whe	<i>nal opinion</i> was in re possible, the r	n evidence (<i>not</i> just <i>superficial ob</i>	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 	each <i>start with 5 points</i> . • <i>add</i> to or <i>deduct</i> from the initection and <i>write it</i> in the corres	ial <i>5 points</i> . ponding box.		
Rep.: 5	Орр.:	5	Rev.:	5
Physics ±3	Physics ±3	***	Physics ±3	auditioners : B
Correct and relevant physics Scientific approach Validity of conclusions Accurate answers	☐ Correct and relevant ☐ Scientific approach ☐ Validity of conclusion ☐ Accurate answers	,	☐ Correct and relevant ☐ Scientific approach ☐ Validity of conclusion ☐ Accurate answers	
Presentation ±1	Presentation ±1	\mathcal{V}	Presentation ±1	0
☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression	☐ Clear and understand ☐ Appropriate manner ☐ Overall impression	dable	☐ Clear and understand ☐ Appropriate manner ☐ Overall impression	able
Reporter ±1	Opponent ±1	0	Reviewer ±1	
Quality of experimental technique(s)	Response to the reposolution	L	Provides a thorough report and discussion	eview of
Structure	Shows the strong and of the report	I weak points	Expresses own opinion	n about
Explanation of formulae and symbols	☐ Finds shortcomings o	r errors in	topics presented or di Relevance of question	s to both the
Appropriate models, conformity of dimensions	the report Relevance of the que.	ctions	reporter and the oppo	nent
Slides, on-site experiments, audio, video, as appropriate			Draws attention to po by the reporter or the	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 grad	ies – please
Contribution to the discussion			do not bend	
Final Grade: Reporter	Final Grade: Opponent	6 Revised	Final Grade: Reviewer after IOC feedback and approved by E	C on 2011-11-03

(Scoring Guidelin	10C \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	n: B Stage: Problem no.:
	application of appropriate mathematics • re	ts, theories and principles of the problem • an easonable experimental technique to gather and experimental findings to draw suitable conclusion	explanation of the observed phenomena • an record data (or demonstrate the phenomena if
1	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 ed and questioned the <i>validity</i> of the <i>data</i> • the
i	<i>important aspects</i> (especially the <i>controvers</i>	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) •
346	The reporter , opponent and reviewer of Consider the following suggestions to a Select each partial grade from each sec	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 shorter	
RAC	ep.: Slovakia 5 lan Des) 5	Opp.: Chinese Talpei 5 (Yi-Hsiang Shyu) 5	Rev.: Poland (Katarzyna Siennicka) 5
	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
Pı	resentation ±1	Presentation ±1	Presentation ±1
	Clear and understandable Appropriate manner Overall impression	☐ Clear and understandable☐ Appropriate manner☐ Overall impression	☐ Clear and understandable☐ Appropriate manner☐ Overall impression
Re	eporter ±1	Opponent ±1	Reviewer ±1
	Quality of experimental technique(s)	Response to the reporter's solution Mathematics not	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
9	Slides, on-site experiments, audio, video, a annioniate	☐ Contribution to the discussion	Draws attention to points missed by the reporter or the opponent
	References, proper citations of ideas and input of others	ting	This sheet will be collected by the fight assistant, so we can scan it and
	Novelty of the report		fight assistant, so we can be archive your partial grades — please

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

Scoring Guidali	Fight (Round no.): 2 Roor	n: TS Stage: 3 Problem no.:
Scoring Guideli	Juror: DEINLEIN	Signature: DO
application of appropriate mathematics • r	ots, theories and principles of the problem • an eleasonable experimental technique to gather and experimental findings to draw suitable conclusion adable manner	record data (or demonstrate the phenomena if
An opposition should show that: • the opponent challenged the reporter's unappropriate mathematics presented • the opponent appreciated and highlighted the 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)
 The reporter, opponent and reviewer Consider the following suggestions to Select each partial grade from each set 	consists of a partial grade for <i>physics</i> , <i>present</i> each <i>start with 5 points</i> . add to or <i>deduct</i> from the initial <i>5 points</i> . ction and <i>write it</i> in the corresponding box. no questions were posed or not finding shortcomes.	
Rep.: Slovakia 5	Opp.: Taipen 5	Rev.: roland 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 FO(S	Opponent ±1	Reviewer ±1
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
☐ Explanation of formulae and	Shows the strong and weak points of the report	Expresses own opinion about topics presented or discussed
symbols Appropriate models, conformity	Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent
of dimensions	Relevance of the questions	Draws attention to points missed by the reporter or the opponent
Slides, on-site experiments, audio,	Contribution to the discussion	-7 are reporter or the opponent

6 Final Grade: Reporter

References, proper citations of ideas and input of others

☐ Contribution to the discussion

 \square 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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This sheet will be collected by the

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

Scoring	Guidelines	Fight (Round no.): 2 Room: 8 Stage: 2 Problem no.:
Scoring	Guiueilles	Juror: DEINLEIN Signature: Do

A report should includ	le	8
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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.

 Select each partial grade from each sec 	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.: <u>Polanol</u> 5	Opp.: Slovalia 5	Rev.: Taipel 5
Physics ±3	Physics ±3 +0(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	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	
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 be archive your partial grades — please
☐ Contribution to the discussion		do not bend
gi-entropy and an analysis of the second and an analysis of the se		

Final Grade: Reporter Final Grade: Opponent

Final Grade: Reviewer

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

		Magnet & Coin
	Fight (Round no.): 2 Roo	m: B Stage: 2, Problem no.:
Scoring Guideli	nps V	Signature:
application of appropriate mathematics • i	reasonable experimental technique t o gather and experimental findings to draw suitable conclusi	explanation of the observed phenomena • an record data (or demonstrate the phenomena if ons • an attempt to communicate difficult or
An opposition should show that: • the opponent challenged the reporter's u	: Inderstanding of the presented concepts, theories Opponent 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 resial ones) • the reviewer's personal opinion was contrivial and demonstrated, where possible, the red by the reporter and the opponent	n evidence (not just superficial observations)
 The reporter, opponent and reviewer Consider the following suggestions to Select each partial grade from each se 	consists of a partial grade for <i>physics, present</i> each <i>start with 5 points</i> . <i>add</i> to or <i>deduct</i> from the initial <i>5 points</i> . ction and <i>write it</i> in the corresponding box. no questions were posed or not finding shorter.	
Rep.: Poland Nateusz Dziwulski) 5	Opp.: Slovakia 5 (Matej Badin) 5	Rev.: Chinese Taiper 5
Physics ±3	Physics ±3 +2	Physics ±3
Correct and relevant physics of Scientific approach Validity of conclusions	Correct and relevant physics	Correct and relevant physics
Scientific approach Validity of conclusions	Scientific approach	Scientific approach
Validity of conclusions Accurate answers	☐ Validity of conclusions ☐ Accurate answers	☐ Validity of conclusions ☐ Accurate answers
Presentation ±1	Presentation ±1	Presentation ±1
☐ Clear and understandable ☐ Appropriate manner	Clear and understandable	☐ Clear and understandable
Overall impression	☐ Overall impression	☐ Appropriate manner
Reporter ±1	Opponent ±1	Overall impression 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	Expresses own opinion about some topics presented or discussed Relevance of questions to both the
Appropriate models, conformity of dimensions	the report Relevance of the questions	reporter and the opponent Draws attention to points missed
Slides, on-site experiments, audio, video, as appropriate	Contribution to the discussion	by the reporter or the opponent
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report		fight assistant, so we do not fight assistant as a single so we do not fight assistant as a single so we do not fight assistant as a single so we do not fight as a single
☐ 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

Final Grade: Reporter

	Fight (Pau	nd na l	R Common D D L	C		
Scoring Guidel	INOC		m: <u>B</u> Stage: 2 Probl			
	Juror: <u>/</u> /	HIL O'NEILL	_ Signature:	<u> </u>		
A report should include: • a presentation of the appropriate concapplication of appropriate mathematics appropriate) • linking of theoretical and complex ideas in an effective and understand	 reasonable experimental to descripe experimental findings to 	technique to gather and	record data (or demonstrate the ph	enomena if		
An opposition should show that • the opponent challenged the reporter's appropriate mathematics presented • the opponent appreciated and highlighted the	s understanding of the prese e opponent critiqued the exp	perimental technique use	and <i>principles</i> • the opponent undeed and questioned the <i>validity</i> of the	erstood the e data • the		
A review should show that:						
 the reviewer succeeded in giving an ob- important aspects (especially the control such personal opinions were informative, principles and appropriate mathematics 	<i>rersial</i> ones) • the reviewer's non-trivial and demonstrate	s <i>personal opinion</i> was i ed, where possible, the r	n evidence (<i>not</i> just <i>superficial obse</i>	ervations) •		
 The grade for each of the three tear The reporter, opponent and review Consider the following suggestions Select each partial grade from each Don't punish missing 'answers' whe 	er each start with 5 point. to add to or deduct from section and write it in the	s. the initial <i>5 points</i> . corresponding box.				
Rep.: POLAND 5	Opp.:	AKIA 5	Rev.: TAIPOL	5		
Physics ±3	Physics ±3	2	Physics ±3	.3		
Correct and relevant physics	☐ Correct and re	levant physics	☐ Correct and relevant ph	nysics		
☐ Scientific approach	☐ Scientific appro		☐ Scientific approach			
☐ Validity of conclusions	☐ Validity of con-		☐ Validity of conclusions			
☐ Accurate answers	☐ Accurate answ	ers	☐ Accurate answers			
Presentation ±1	Presentation ±	:1	Presentation ±1			
☐ Clear and understandable	☐ Clear and unde	erstandable	☐ Clear and understandal	ole		
☐ Appropriate manner	Appropriate m		☐ Appropriate manner			
Overall impression	Overall impres.	sion	Overall impression			
Reporter ±1 /	Opponent ±1	ALEGER TO THE PARTY OF THE PART	Reviewer ±1	1,000		
Quality of experimental technique(s)	Response to the solution	e reporter's	Provides a thorough rev report and discussion	iew of		
☐ Structure	☐ Shows the stro	ng and weak points	☐ Expresses own opinion	about		
Explanation of formulae and symbols	of the report Finds shortcom	nings or errors in	topics presented or discussed Relevance of questions to both th			
Appropriate models, conformity of dimensions	the report Relevance of th	ne questions	reporter and the oppon Draws attention to poin	ent		
Slides, on-site experiments, audio video, as appropriate		the discussion	by the reporter or the o	pponent		
References, proper citations of ideas and input of others			This sheet will be collecte fight assistant, so we can so			
☐ Novelty of the report			fight assistant, 50 we con archive your partial grade:	_s – please		

Final Grade: Reporter

 \square Contribution to the discussion

Final Grade: Opponent

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

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Fight (Round no.): 2	_Room: <u>203</u> Stage: 2 P	roblem no.:
Juror: Tan In	Signature:	

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

An opposition should show that:

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

A review should show that:

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 n 	o questions were posed or not finding shortco	omings if there were none to find.
Rep.: Poland 5	Opp.: Slovakia 5	Rev.: Tapei
Physics ±3 Correct and relevant physics	Physics ±3 ☐ Correct and relevant physics	Physics ±3 Correct and relevant physics
☐ Scientific approach ☐ Validity of conclusions ☐ Accurate answers	☐ Scientific approach ☐ Validity of conclusions ☐ Accurate answers	☐ 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 -0.5	Opponent ±1	Reviewer ±1
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
☐ Structure	Shows the strong and weak points of the report	Expresses own opinion about topics presented or discussed
Explanation of formulae and symbols	Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent
 Appropriate models, conformity of dimensions 	Relevance of the questions	☐ Draws attention to points missed
Slides, on-site experiments, audio,		by the reporter or the opponent
video, as appropriate	☐ Contribution to the discussion	
References, proper citations of ideas and input of others	L.J. Contribution to the discussion	This sheet will be collected by the
	L.J. Contribution to the discussion	
References, proper citations of ideas and input of others	LJ Contribution to the discussion	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

		Fight (Round no.): _	Room:	Stag	e: Problem no.:
Scoring	Guidelines	Juror: <u>Klaus</u>	Roller	Signature:	DAD

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

An opposition should show that:

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

A review should show that:

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

 Select each partial grade from each see Don't punish missing 'answers' when n 	ction and write it in the corresponding box. To questions were posed or not finding shortco	omings if the area was a second of
Rep.: Poland 5	Opp.: Slovalia 5	Rev.: Chinese Taipei 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 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
 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		archive your partial grades
Contribution to the discussion		do not bend

Final Grade: Reporter Final Grade: Opponent

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-	A STORY			8	A	4	1	M	ATURN	2	廢	Æ	#	100	E.	Ø	200	8	1	-
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********	400	4000	800	ee.	897	w		400	PHOSE-	4000	# 1	8	AND B	AND SERVICE	227	500	# 8	я	400000	4

Fight (Round no.): _	<u></u> Room:	15 Stage:	Problem no.:
Juror: Loby	8 few	Signature:	Blee

Final Grade: Reviewer

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

A report should include:

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

An opposition should show that:

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

A review should show that:

Final Grade: Reporter

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

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

Convina	Cuidalina	Fight (Ro	ound no.):		Room:		Stag
Juing	Guidelines	Juror:	Tan	Jan		Signature	ρ:

• 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.
- Salart each nartial grade fr

	ction and <i>write it</i> in the corresponding box. o questions were posed or not finding shortco	omings if there were none to find.
Rep.: Taipei 5	Opp.: Poland 5	Rev.: Siwalcia 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 -0.5	Opponent ±1	Reviewer ±1 +1
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
☐ Structure	☐ 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 or archive your partial grades – please
☐ Contribution to the discussion		do not bend
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Final Grade: Reporter

Final Grade: Opponent

		Fight (Round no.): Room:	Stage:	Problem
Scoring	Guidelines	101		20
		Juror: Lobyshev	Signature:	

Α	report	should	include:

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

An opposition should show that:

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

A review should show that:

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

 The reporter, opponent and reviewer Consider the following suggestions to Select each partial grade from each sec 	consists of a partial grade for physics, present each start with 5 points. add to or deduct from the initial 5 points. Stion and write it in the corresponding box. To questions were posed or not finding shorted to the policy of the policy	
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 +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 □ 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 do not bend
- continuation to the discussion		GO tine

Final Grade: Reporter

Final Grade: Opponent



Scoring Guidelines

Fight (Round no.): 2 Room: 3 Stage: Problem no.: 3
Juror: Wlaus Roller Signature:
and principles of the problem • an explanation of the observed phenomena • an experimental technique to gather and record data (or demonstrate the phenomena if
al findings to draw suitable conclusions • an attempt to communicate difficult or ner

A report should include:

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

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.: Chinese Taiper 5	Opp.: Poland 5	Rev.: Slovalia 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 + 1	Opponent ±1	Reviewer ±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	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		archive your partial broods					
Contribution to the discussion		do not bend					
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					Problem no.:	<u> </u>
Juror: _	PHIL	ONEICC	S	Signature:	 Meill	
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Final Grade: Reviewer

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

A report should include:

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

An opposition should show that:

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

A review should show that:

Final Grade: Reporter

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

 Select each partial grade from each sec 	ction and write it in the corresponding box. To questions were posed or not finding shortco	omings if there were none to find.
Rep.: <i>TAICAL</i> 5	Opp.: <u>POLANO</u> 5	Rev.: SCOVAKIA 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 reporter and the opponent
Appropriate models, conformity of dimensions	☐ Relevance of the questions	☐ Draws attention to points missed
Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	by the reporter or the opponent
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report		fight assistant, so we con- archive your partial grades – please
Contribution to the discussion		do not bend
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Final Grade: Opponent

String of Beads _Stage: Problem no.:	
n of the observed phenomena • an a (or demonstrate the phenomena if ttempt to communicate difficult or	
ples • the opponent understood the stioned the validity of the data • the	
nent • the reviewer appreciated the (not just superficial observations) • understanding of concepts, theories,	

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 application of appropriate mathematics • reasonable experimental technique to gather and record date appropriate) • linking of theoretical and experimental findings to draw suitable conclusions • an a 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 princip appropriate mathematics presented • the opponent critiqued the experimental technique used and ques 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 oppon important aspects (especially the controversial ones) • the reviewer's personal opinion was in evidence such personal opinions were *informative*, *non-trivial* and demonstrated, where possible, the reviewer's uprinciples and appropriate mathematics used by the reporter and the opponent

 The reporter, opponent and reviewer of consider the following suggestions to Select each partial grade from each second 	consists of a partial grade for <i>physics, present</i> each <i>start with 5 points</i> . add to or <i>deduct</i> from the initial <i>5 points</i> . ction and <i>write it</i> in the corresponding box. to questions were posed or not finding shortcomes.	
Rep.: Chinese Taipei 5	Opp.: Poland 5	Rev.: Slovakia 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 Reporter ±1 Quality of experimental technique(s) Structure Explanation of formulae and symbols Appropriate models, conformity	☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression Opponent ±1 ☐ Response to the reporter's solution ☐ Shows the strong and weak points of the report ☐ Finds shortcomings or errors in the report	Clear and understandable Appropriate manner Overall impression Reviewer ±1 Provides a thorough review of report and discussion Expresses own opinion about topics presented or discussed Relevance of questions to both the reporter and the opponent
of dimensions Slides, on-site experiments, audio, video, as appropriate	Relevance of the questions Contribution to the discussion	Draws attention to points missed by the reporter or the opponent
References, proper citations of ideas and input of others Novelty of the report Contribution to the discussion		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: Reporter	Final Grade: Opponent	Final Grade: Reviewer

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Final Grade: Reporter

	Fight (Round no.): 2 Room	m: <u>B</u> Stage: <u>A</u> Problem no.: 3						
Scoring Guideling	1es Juror: DEINLEIN	Signature: Do						
A social discharge								
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 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						
A review should show that:								
important aspects (especially the controvers	ctive summary of the performances the reporter sial ones) • the reviewer's personal opinion was interview and demonstrated, where possible, the industrial and the opponent	n evidence (not just superficial observations) •						
 The reporter, opponent and reviewer of the consider the following suggestions to select each partial grade from each section bon't punish missing 'answers' when not be considered. 	consists of a partial grade for <i>physics, presen</i> each <i>start with 5 points</i> . add to or deduct from the initial <i>5 points</i> . ction and write it in the corresponding box. no questions were posed or not finding shorte							
Rep.: Taipel 5	Opp.: Poland 5	Rev.: Slovalia 5						
Physics ±3	Physics ±3	Physics ±3						
Correct and relevant physics	☐ Correct and relevant physics	☐ Correct and relevant physics						
☐ Scientific approach☐ Validity of conclusions	Scientific approach	Scientific approach						
Accurate answers	☐ Validity of conclusions ☐ Accurate answers	☐ Validity of conclusions ☐ Accurate answers						
Presentation ±1	Presentation ±1	Presentation ±1						
☐ Clear and understandable	☐ Clear and understandable	☐ Clear and understandable						
☐ Appropriate manner	☐ Appropriate manner	☐ Appropriate manner						
Overall impression	Overall impression	☐ Overall impression						
Reporter ±1 +0,5	Opponent ±1	Reviewer ±1						
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion						
☐ Structure	Shows the strong and weak points of the report	Expresses own opinion about						
Explanation of formulae and symbols	Finds shortcomings or errors in the report	topics presented or discussed Relevance of questions to both the						
Appropriate models, conformity of dimensions	Relevance of the questions	reporter and the opponent Draws attention to points missed						
Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	by the reporter or the opponent						
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please						
☐ Novelty of the report								
☐ Contribution to the discussion		do not bend						

Final Grade: Opponent