	Fight (Round no.): Roor	n: F Stage: 1 Problem no.: 5
Scoring Guideling	1es Juror: Chrism Your Li	Signature: File Policy
A report should include:		
application of appropriate mathematics • re	easonable experimental technique to gather and experimental technique to gather and experimental findings to draw suitable conclusionable manner.	record data (or demonstrate the phenomena if
An opposition should show that:	44	
• the opponent <i>challenged</i> the <i>reporter's us</i>	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:		
important aspects (especially the controvers	tive summary of the performances the reporter sial ones) • the reviewer's personal opinion was in the reviewer's personal opinion was in 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 see 	consists of a partial grade for <i>physics, presen</i> each start with 5 points. add to or deduct from the initial 5 points. ction and write it in the corresponding box. so questions were posed or not finding shortc	
Rep.: Russia 5	Opp.: (20ch 5	Rev.: Georgia 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☐ Accurate answers	☐ Validity of conclusions ☐ Accurate answers	☐ Validity of conclusions ☐ Accurate answers
		Accurate answers
Presentation ±1	Presentation ±1	Presentation ±1
☐ Clear and understandable	☐ Clear and understandable	☐ Clear and understandable
☐ Appropriate manner☐ Overall impression	☐ 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 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	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 contained 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: Reporter

Final Grade: Reviewer

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

Scoring Guidelines	S	C	0	ľ				g	G				d	e	Representation of the last of			7	e	5	
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Final Grade: Reporter

Scoring Guideli			n:E Stage:/ Signature: <i>F.V.a.</i>	_Problem no.: <u>S</u> Wodenish
A report should include: • a presentation of the appropriate conce application of appropriate mathematics • appropriate) • linking of theoretical and complex ideas in an effective and understa	reasonable experimental tec experimental findings to dr	hnique to <i>gather</i> and <i>i</i>	r <mark>ecord data (</mark> or <mark>demo</mark> nstrat	te the phenomena if
An opposition should show that • the opponent <i>challenged</i> the <i>reporter's appropriate mathematics</i> presented • the opponent appreciated and highlighted the s	understanding of the present opponent critiqued the exper	imental technique use	and <i>principles</i> • the oppon d and questioned the <i>valid</i> i	ent understood the fity of the data • the
A review should show that: • the reviewer succeeded in giving an objeimportant aspects (especially the controve such personal opinions were informative, in principles and appropriate mathematics us	rsial ones) • the reviewer's p non-trivial and demonstrated,	ersonal opinion was in where possible, the re	n evidence (<i>not</i> just <i>superfi</i>	cial observations) •
The grade for each of the three team: The <i>reporter</i> , <i>opponent</i> and <i>reviewer</i> Consider the following <i>suggestions</i> to Select each partial grade from each se Don't punish missing 'answers' when	r each s tart with 5 points . O add to or deduct from the ection and write it in the co	e initial <i>5 points</i> . orresponding box.		
Rep.: Rissia 5	Opp.: <u>(zed)</u>	<i>Rp</i> 5	Rev.: <u>Georgi</u>	5
hysics ±3 +03	Physics ±3	+1	Physics ±3	+1
Correct and relevant physics	☐ Correct and rele	vant physics	☐ Correct and rele	vant physics
Scientific approach	☐ Scientific approa	ch	☐ Scientific approa	•

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

Select each partial grade from each secDon't punish missing 'answers' when n	ction and write it in the corresponding box. o questions were posed or not finding shorter	omings if there were none to find.
Rep.: <u>Russia</u> 5	Opp.: <u>Ged Rep</u> 5	Rev.: 61601916 5
Physics ±3	Physics ±3 +A	Physics ±3 +1
☐ Correct and relevant physics☐ Scientific approach☐ Validity of conclusions☐ Accurate answers	☐ Correct and relevant physics☐ Scientific approach☐ Validity of conclusions☐ Accurate answers	 ☐ Correct and relevant physics ☐ Scientific approach ☐ Validity of conclusions ☐ Accurate answers
Presentation ±1 +0,3 Clear and understandable Appropriate manner Overall impression	Presentation ±1	Presentation ±1
Reporter ± 1 ± 0.3	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 the report	Expresses own opinion about topics presented or discussed Relevance of questions to both the reporter and the opponent
 □ Appropriate models, conformity 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
		And Brane -

Final Grade: Opponent

6		Fight (Round no.): _	Room: Stag	ge:
Scoring	Guidelines	luror: Tomás	BZDUŠEK Signature:	1
		Juloi.	Signature:	1

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 n 	no questions were posed or not finding shortco	omings if there were none to find.
Rep.: RUSSIA 5	Opp.: CEECH 5	Rev.: 660861A 5
Physics ±3 +2 M	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 ±175	Reviewer ±1
Reporter ±1 Quality of experimental technique(s)	Opponent ±175 Response to the reporter's solution	Reviewer ±1 Provides a thorough review of report and discussion
Quality of experimental technique(s) Structure	Response to the reporter's	Provides a thorough review of report and discussion Expresses own opinion about
Quality of experimental technique(s) Structure Explanation of formulae and symbols	Response to the reporter's solution Shows the strong and weak points of the report Finds shortcomings or errors in	Provides a thorough review of report and discussion Expresses own opinion about topics presented or discussed Relevance of questions to both the
Quality of experimental technique(s) Structure Explanation of formulae and	Response to the reporter's solution Shows the strong and weak points of the report	Provides a thorough review of report and discussion Expresses own opinion about topics presented or discussed Relevance of questions to both the reporter and the opponent Draws attention to points missed
Quality of experimental technique(s) Structure Explanation of formulae and symbols Appropriate models, conformity	Response to the reporter's solution Shows the strong and weak points of the report Finds shortcomings or errors in the report	 □ 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
☐ Quality of experimental technique(s) ☐ Structure ☐ Explanation of formulae and symbols ☐ Appropriate models, conformity of dimensions ☐ Slides, on-site experiments, audio, video, as appropriate	Response to the reporter's solution Shows the strong and weak points of the report Finds shortcomings or errors in the report Relevance of the questions	□ Provides a thorough review of report and discussion □ Expresses own opinion about topics presented or discussed □ Relevance of questions to both the reporter and the opponent □ Draws attention to points missed by the reporter or the opponent
☐ Quality of experimental technique(s) ☐ Structure ☐ Explanation of formulae and symbols ☐ Appropriate models, conformity of dimensions ☐ Slides, on-site experiments, audio.	Response to the reporter's solution Shows the strong and weak points of the report Finds shortcomings or errors in the report Relevance of the questions	Provides a thorough review of report and discussion Expresses own opinion about topics presented or discussed Relevance of questions to both the reporter and the opponent Draws attention to points missed by the reporter or the opponent This sheet will be collected by the fight assistant, so we can scan it and fight assistant, so we can scan it and archive your partial grades – please
 ☐ Quality of experimental technique(s) ☐ Structure ☐ Explanation of formulae and symbols ☐ Appropriate models, conformity of dimensions ☐ Slides, on-site experiments, audio, video, as appropriate ☐ References, proper citations of ideas and input of others 	Response to the reporter's solution Shows the strong and weak points of the report Finds shortcomings or errors in the report Relevance of the questions	□ Provides a thorough review of report and discussion □ Expresses own opinion about topics presented or discussed □ Relevance of questions to both the reporter and the opponent □ Draws attention to points missed by the reporter or the opponent

Final Grade: Opponent

Scoring Guidelines

Fight (F	Round no.):	3_Roor	m: <u>/Ξ</u>	Stage: _		Problem no	o.: <u>5</u>
Juror:	PHILON	1EILL	Signat	ure:	30%	Veill	
and princ	<i>ciples</i> of the pro	oblem • an	explanatio	on of the o	hserved	nhenomena	* 20
experimen	t al technique to s to draw <i>suita</i>	gather and	record dat	t a (or demo	nstrate	the <i>phenom</i>	ena if

Final Grade: Reviewer CF Con 2011-11-03

A report should include:

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

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 noints

 Select each partial grade from each sec 	etion and write it in the corresponding box. o questions were posed or not finding shortco	omings if there were none to find.
Rep.: <u>RUSSIA</u> 5	Opp.: CZECH RER 5	Rev.: 6-60261A 5
Physics ±3	Physics ±3	Physics ±3
Correct and relevant physics	☐ Correct and relevant physics	☐ Correct and relevant physics
	☐ Scientific approach	☐ Scientific approach
	☐ Validity of conclusions	☐ Validity of conclusions
Accurate answers	☐ Accurate answers	☐ Accurate answers
Presentation ±1	Presentation ±1	Presentation ±1
Clear and understandable	☐ Clear and understandable	☐ Clear and understandable
☐ 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	
☐ Slides, on-site experiments, audio,	•	Draws attention to points missed by the reporter or the opponent
video, as appropriate	Contribution to the discussion	
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report		fight assistant, so we com- archive your partial grades – please
Contribution to the discussion		do not bend
Final Grade: Reporter	Final Grade: Opponent	Final Grade: Reviewer

	Fight (Round no.): Roor	n: E Stage: I Problem no.: 5
Scoring Guidelin	nes Juror: IVAN ANTSIPA	/ //
	Julion	Signature.
application of appropriate mathematics • re	ets, theories and principles of the problem • an e easonable experimental technique to gather and experimental findings to draw suitable conclusion dable manner	record data (or demonstrate the phenomena if
An opposition should show that: • the opponent challenged the reporter's 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:		
important aspects (especially the controvers	ctive summary of the performances the reporter sial ones) • the reviewer's personal opinion was in 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 see 	consists of a partial grade for <i>physics</i> , <i>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 shortc	
Rep.: <i>RUSSIA</i> 5	Opp.: C. T ECH KER 5	Rev.: <u>6 E0R6T A</u> 5
Physics ±3	Physics ±3	Physics ±3
Correct and relevant physics	Correct and relevant physics	Correct and relevant physics
Scientific approach	Scientific approach	☐ Scientific approach
✓ Validity of conclusions✓ 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	Opponent ±1	Reviewer ±1 -0.5
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
Structure	Shows the strong and weak points 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	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 be 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

Scoring Guidelin	Fight (Round no.): <u>3</u> Roon 100 100 100 100 100 100 100	n: <u>F</u> Stage: <u>1</u> Problem no.: <u>5</u> Signature: <u>Jul</u>
A report should include:		
application of appropriate mathematics • re	ts, theories and principles of the problem • an easonable experimental technique to gather and a easonable experimental technique to gather and a experimental findings to draw suitable conclusion dable manner	record data (or demonstrate the phenomena if
An opposition should show that: • the opponent challenged the reporter's 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 d and questioned the <i>validity</i> of the <i>data</i> • the
A review should show that:		
important aspects (especially the controvers	tive summary of the performances the reporter ial ones) • the reviewer's personal opinion was in n-trivial and demonstrated, where possible, the red d by the reporter and the opponent	evidence (not just superficial observations)
 The reporter, opponent and reviewer e Consider the following suggestions to e Select each partial grade from each sec 	consists of a partial grade for <i>physics, present</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. o questions were posed or not finding shorted	
Rep.: Justia 5	Opp.: But Republic 5	Rev.: Gwigia 5
Physics ±3 +1	Physics ±3 +1	Physics ±3 +2
Correct and relevant physics		① 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	E Clear and understandable	🗄 Clear and understandable
☐ Appropriate manner	☐ Appropriate manner	Appropriate manner
	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 Draws attention to points missed
Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	by the reporter or the opponent

☐ Contribution to the discussion Final Grade: Reporter

References, proper citations of ideas and input of others

☐ Novelty of the report

Final Grade: Opponent

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

	Fight (Round no.): Roor	n: E Stage: 2 Problem no.:
Scoring Guideling	1es Juror: Chron Jone 1	
	· 0	
application of appropriate mathematics • r	ets, theories and principles of the problem • an energy and easonable experimental technique to gather and experimental findings to draw suitable conclusions dable manner	record data (or demonstrate the phenomena if
An opposition should show that: • the opponent challenged the reporter's unappropriate mathematics presented • the opponent appreciated and highlighted the st	nderstanding of the presented concepts, theories pponent critiqued the experimental technique use	and <i>principles</i> • the opponent understood the data • 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 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 see Don't punish missing 'answers' when r 	add to or deduct from the initial 5 points. ction and write it in the corresponding box. no questions were posed or not finding shortc	omings if there were none to find.
Rep.: (2ech 5	Opp.: Georgia 5	Rev.: Russia 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 +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	日 Expresses own opinion about
Explanation of formulae and symbols	Finds shortcomings or errors in	topics presented or discussed Relevance of questions to both the
Appropriate models, conformity of dimensions	the report Relevance of the questions	reporter and the opponent Draws attention to points missed
Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	by the reporter or the opponent
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and
Novelty of the report		fight assistant, so we come

☐ Novelty of the report

☐ 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

archive your partial grades - please

Scoring Guidelines

Fight (R	Round no.):	3	Room:	<u>E</u>	Stage:	2	Problem	no.: _	1
Juror:	Wortzus	ski		Signatur	p. E.	la la	mazu	:<4	2.

A report should include:

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

An opposition should show that:

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

A review should show that:

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

 Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find. 											
Rep.: (7ed, Rep. 5	Орр.: <u>Енеогдіа</u> 5	Rev.: Russia 5									
Physics ±3 Correct and relevant physics Scientific approach Validity of conclusions Accurate answers Presentation ±1	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									
☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression	Presentation ±1 ☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression	Presentation ±1									
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	Shows the strong and weak points of the report	Expresses own opinion about topics presented or discussed									
symbols Appropriate models, conformity of dimensions	Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent									
Slides, on-site experiments, audio, video, as appropriate	☐ Relevance of the questions ☐ Contribution to the discussion	Draws attention to points missed by the reporter or the opponent									
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and									
☐ Novelty of the report		fight assistant, so we can see archive your partial grades – please									
Contribution to the discussion	***************************************	do not bend									
Final Grade: Reporter	Final Grade: Opponent Revised a	Final Grade: Reviewer fter IOC feedback and approved by EC on 2011-11-03									

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9	m m	Mar.	1 8	*		/	# #		AFO.	6	ě	g			(PRO)
	CO							H			H				3
				-	Secret 19		- 10	_	~	4000		200		- Californ	-000

Fight (Round no.):	Room: _	Stage:	Prob	lem no.:
Juror: Tomas	85DAZEK	Signature:		B20

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

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.

	add to or deduct from the initial 5 points. Stion 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.: CZECH	Opp.: GEORGIA 5	Rev.: <u>Eussia</u> 5
Physics ±3	Physics ±3	Physics ±3
Correct and relevant physics	☐ Correct and relevant physics	☐ Correct and relevant physics
☐ Scientific approach	☐ Scientific approach	☐ Scientific approach
☐ Validity of conclusions	☐ Validity of conclusions	☐ Validity of conclusions
☐ Accurate answers	☐ Accurate answers	☐ Accurate answers
Presentation ±1	Presentation ±1	Presentation ±1 +5
☐ 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 +.5
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
☐ Structure	☐ Shows the strong and weak points	☐ Expresses own opinion about
☐ Explanation of formulae and	of the report	topics presented or discussed
cumbals		topics presented of discussed
symbols Appropriate models, conformity	Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent
,	☐ Finds shortcomings or errors in the report ☐ Relevance of the questions	Relevance of questions to both the reporter and the opponent Draws attention to points missed
Appropriate models, conformity	the report	Relevance of questions to both the reporter and the opponent
Appropriate models, conformity of dimensions Slides, on-site experiments, audio	the report Relevance of the questions	Relevance of questions to both the reporter and the opponent Draws attention to points missed by the reporter or the opponent This sheet will be collected by the
 Appropriate models, conformity of dimensions Slides, on-site experiments, audio, video, as appropriate 	the report Relevance of the questions	Relevance of questions to both the reporter and the opponent Draws attention to points missed by the reporter or the opponent This sheet will be collected by the
Appropriate models, conformity of dimensions Slides, on-site experiments, audio, video, as appropriate References, proper citations of ideas and input of others	the report Relevance of the questions	Relevance of questions to both the reporter and the opponent Draws attention to points missed by the reporter or the opponent

		2					
Scoring Guideli		m: <u>E</u> Stage: Problem no.:					
Scoring Galacin	Juror: PHIL O'NEILL	Signature: 190 Meile					
A report should include:		/					
• a presentation of the appropriate concept application of appropriate mathematics • r	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 unappropriate mathematics presented • the opponent appreciated and highlighted the statement of the sta	nderstanding of the presented concepts, theories apponent critiqued the experimental technique us	and <i>principles</i> • the opponent understood the ed and questioned the <i>validity</i> of the <i>data</i> • the					
A review should show that:							
important aspects (especially the controver	ctive summary of the performances the reporter isial ones) • the reviewer's personal opinion was in 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, presen</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 shorts						
Rep.:	Opp.:	Rev.:					
5	5	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 symbols	of the report Finds shortcomings or errors in	topics presented or discussed Relevance of questions to both the					
Appropriate models, conformity of dimensions	the report	reporter and the opponent					
Slides, on-site experiments, audio, video, as appropriate	☐ Relevance of the questions ☐ Contribution to the discussion	Draws attention to points missed by the reporter or the opponent					
References, proper citations of ideas and input of others		This sheet will be collected by the					
Novelty of the report		This sheet will be conscan it and fight assistant, so we can scan it and archive your partial grades — please					

 \square Contribution to the discussion

Final Grade: Opponent

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	Fight (Round no.): Room	n: E Stage: Problem no.: 1
Scoring Guidelin	1es Juror: LVANKNISIPAL	
application of appropriate mathematics • r	ets, theories and principles of the problem • an experimental technique to gather and it experimental findings to draw suitable conclusion dable manner	record data (or demonstrate the phenomena if
An opposition should show that: • the opponent challenged the reporter's use appropriate mathematics presented • the opponent appreciated and highlighted the st	nderstanding of the presented concepts, theories pponent critiqued the experimental technique use rengths and weaknesses of the report	and <i>principles</i> • the opponent understood the d and questioned the <i>validity</i> of the <i>data</i> • the
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	n 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, 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 shorter	
Rep.: CZECH Rep. 5	Opp.: <u>BEORGTA</u> 5	Rev.: RUSSIA 5
Physics ±3	Physics ±3	Physics ±3
☐ Correct and relevant physics☐ Scientific approach☐ Validity of conclusions☐ Accurate answers	☐ Correct and relevant physics ☐ Scientific approach ☐ Validity of conclusions ☐ Accurate answers	Correct and relevant physics Scientific approach Validity of conclusions Accurate answers
Presentation ±1 Clear and understandable Appropriate manner Overall impression	Presentation ±1 ☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression	Presentation ±1 ☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression
Reporter ±1	Opponent ±1	Reviewer ±1
 Quality of experimental technique(s) 	Response to the reporter's solution	Provides a thorough review of report and discussion
Structure	Shows the strong and weak points of the report	Expresses own opinion about topics presented or discussed
Explanation of formulae and symbols	Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent
☐ Appropriate models, conformity of dimensions	Relevance of the questions	Draws attention to points missed by the reporter or the opponent
☐ Slides, on-site experiments, audio, video, as appropriate	Contribution to the discussion	
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and
Novelty of the report		fight assistant, so we archive your partial grades — please do not bend
Contribution to the discussion Final Grade: Reporter	Final Grade: Opponent Revised	Final Grade: Reviewer after IOC feedback and approved by EC on 2011-11-03

	7	~						
Scoring Guidelin	1185 Juror: Raw Um son	n: <u>E</u> Stage: <u>2</u> Problem no.:						
application of appropriate mathematics * r	ets, theories and principles of the problem • an of easonable experimental technique to gather and experimental findings to draw suitable conclusions adubte 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						
<i>Important aspects</i> (especially the <i>controver</i> s	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	n evidence (not just superficial observations) .						
 The reporter, opponent and reviewer Consider the following suggestions to Select each partial grade from each see 	consists of a partial grade for <i>physics, presen</i> each <i>start with 5 points</i> . add to or <i>deduct</i> from the initial <i>5 points</i> . ction and <i>write it</i> in the corresponding box. no questions were posed or not finding shortc							
Rep.: Affile 5	Opp.: Georgia 5	Rev.: Runia 5						
Physics ± 3 $\boxed{+1}$	Physics ±3	Physics ±3						
Correct and relevant physics	Correct and relevant physics							
Scientific approach	☐ Scientific approach	☐ Scientific approach						
☐ Validity of conclusions	☐ Validity of conclusions							
☐ Accurate answers	Accurate answers	L Accurate answers						
Presentation ±1	Presentation ±1	Presentation ±1						
Clear and understandable	Clear and understandable	Clear and understandable						
Appropriate manner	☐ Appropriate manner	☐ Appropriate manner						
Overall impression	Overall impression	Overall impression						
Reporter ±1	Opponent ±1	Reviewer ±1						
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion						
□ Structure□ Explanation of formulae and	Shows the strong and weak points of the report	Expresses own opinion about topics presented or discussed						
symbols Appropriate models, conformity	Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent						
of dimensions Slides, on-site experiments, audio.	Relevance of the questions Contribution to the discussion	Draws attention to points missed by the reporter or the opponent						
video, as appropriate References, proper citations of ideas and input of others		This sheet will be collected by the						
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☐ Novelty of the report

 \square Contribution to the discussion

Final Grade: Opponent

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

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	7	n: Stage: Problem no.:
Scoring Guidelin		
	Juror: Chranfoy !	Signature:
A report should include:		
	ts, theories and principles of the problem • an e	explanation of the observed phenomena • an
application of appropriate mathematics • re	easonable experimental technique to <i>gather</i> and <i>i</i> xperimental findings to draw <i>suitable conclusio</i>	record data (or demonstrate the phenomena if
An opposition should show that:		
• the opponent <i>challenged</i> the <i>reporter's un</i>	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 d and questioned the <i>validity</i> of the <i>data</i> • the
A review should show that:		
• the reviewer succeeded in giving an <i>objec</i>	tive summary of the performances the reporter	and opponent • the reviewer appreciated the
such personal opinions were <i>informative</i> , <i>no</i>	ial ones) • the reviewer's personal opinion was in n-trivial and demonstrated, where possible, the re	evidence (not just superficial observations) •
principles and appropriate mathematics used	by the reporter and the opponent	or concepts, theories,
 The grade for each of the three teams 	consists of a partial grade for <i>physics, presen</i> t	ration and for their specific role
 The reporter, opponent and reviewer expenses 	each start with 5 points.	and of their specific forc.
	add to or deduct from the initial 5 points. tion 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
	i	
Rep.: (georgia 5	Opp.: Russia 5	Rev.: (Zech Republity
Physics ±3	Physics ±3 +a5	Physics ±3
Correct and relevant physics	Correct and relevant physics	Correct and relevant physics
Scientific approach	Scientific approach	Scientific approach
☐ Validity of conclusions ☐ Accurate answers	☐ Validity of conclusions	☐ Validity of conclusions
Accurate answers	☐ Accurate answers	☐ Accurate answers
Presentation ±1	Presentation ±1	Presentation ±1
Clear and understandable	☐ Clear and understandable	☐ Clear and understandable
Appropriate manner	Appropriate manner	☐ Appropriate manner
✓ 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.	Contribution to the discussion	by the reporter or the opponent

This sheet will be collected by the References, proper citations of ideas and input of others fight assistant, so we can scan it and archive your partial grades - please ☐ Novelty of the report Contribution to the discussion do not bend

☐ Contribution to the discussion

Final Grade: Opponent Final Grade: Reviewer

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

Final Grade: Reporter

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

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						dawer 60°													

 $\hfill\Box$ Contribution to the discussion

Final Grade: Reporter

	Fight (Round no.): Roon	n: Stage: Problem no.: Z									
Scoring Guidelin	100	Signature: Elfa Wockeruski									
application of appropriate mathematics • re	ts, theories and principles of the problem • an e easonable experimental technique to gather and a experimental findings to draw suitable conclusion dable manner	record data (or demonstrate the phenomena if									
An opposition should show that: • the opponent challenged the reporter's unappropriate mathematics presented • the opponent appreciated and highlighted the st.	nderstanding of the presented concepts, theories pponent critiqued the experimental technique use rengths and weaknesses of the report	and <i>principles</i> • the opponent understood the d and questioned the <i>validity</i> of the <i>data</i> • the									
important aspects (especially the controvers	tive summary of the performances the reporter sial ones) • the reviewer's personal opinion was in- trivial and demonstrated, where possible, the red by the reporter and the opponent	evidence (not just superficial observations)									
 The grade for each of the three teams consists of a partial grade for <i>physics</i>, <i>presentation</i> and for their <i>specific role</i>. The <i>reporter</i>, <i>opponent</i> and <i>reviewer</i> each <i>start with 5 points</i>. Consider the following <i>suggestions</i> to <i>add</i> to or <i>deduct</i> from the initial <i>5 points</i>. Select each partial grade from each section and <i>write it</i> 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.: Georgia 5	Opp.: Russia 5	Rev.: <u>C7ech</u> 5									
Physics ±3	Physics ±3	Physics ±3									
☐ Correct and relevant physics	☐ Correct and relevant physics	☐ Correct and relevant physics									
☐ Scientific approach	Scientific approach	☐ Scientific approach									
☐ Validity of conclusions ☐ 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	Opponent ±1	Reviewer ±1									
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion									
☐ Structure	☐ Shows the strong and weak points	Expresses own opinion about									
☐ Explanation of formulae and symbols	of the report Finds shortcomings or errors in	topics presented or discussed Relevance of questions to both the									
☐ Appropriate models, conformity	the report	reporter and the opponent									
of dimensions Slides, on-site experiments, audio, video, as appropriate	☐ Relevance of the questions ☐ Contribution to the discussion	Draws attention to points missed by the reporter or the opponent									
References, proper citations of ideas and input of others		This sheet will be collected by the									
☐ Novelty of the report		This sheet will be corrected fight assistant, so we can scan it and archive your partial grades – please									

Final Grade: Opponent



Final Grade: Reviewer

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Fight (Round no.):		om: _ <i>E</i>	_ Stage:	Problem no.:	2
Juror: 10m15	BEDUS	EK Signatur	e: Th	_ BZ8	And the second division in the second

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 spe

• The reporter, opponent and reviewer e	each start with 5 points . add to or deduct from the initial 5 points .	ution and for their specific role.				
 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.: GEORGIA 5	Opp.: RUSSIA 5	Rev.: CZECH REP. 5				
Physics ±3	Physics ±3	Physics ±3 +2.5				
☐ Correct and relevant physics	☐ Correct and relevant physics	Correct and relevant physics				
☐ Scientific approach	☐ Scientific approach	☐ Scientific approach				
☐ Validity of conclusions	☐ Validity of conclusions	☐ 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					
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 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

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Scoring Guideli	BADA AND AND		n: Stage: Pr Signature: PG	
A report should include: • a presentation of the appropriate concept application of appropriate mathematics • 11 appropriate) • linking of theoretical and 12 complex ideas in an effective and understant	reasonable experimental techniq experimental findings to draw	ue to <i>gather</i> and	record data (or demonstrate the	e phenomena if
An opposition should show that: • the opponent challenged the reporter's u appropriate mathematics presented • the o opponent appreciated and highlighted the si	nderstanding of the presented copponent critiqued the experimen	ntal technique use	and <i>principles</i> • the opponent ed and questioned the <i>validity</i> o	understood the f the data • the
A review should show that: • the reviewer succeeded in giving an objeimportant aspects (especially the controver such personal opinions were informative, no principles and appropriate mathematics use	rsial ones) • the reviewer's <i>perso</i> pn-trivial and demonstrated, whe	<i>nal opinion</i> was in ere possible, the r	n evidence (not just superficial i	observations) a
The grade for each of the three teams The <i>reporter</i> , <i>opponent</i> and <i>reviewer</i> Consider the following <i>suggestions</i> to Select each partial grade from each se Don't punish missing 'answers' when r	each start with 5 points. add to or deduct from the iniction and write it in the corre	tial 5 points . sponding box.		
Rep.:5	Орр.:	5	Rev.:	5
hysics ±3	Physics ±3		Physics ±3	
Correct and relevant physics	☐ Correct and relevant	t physics	☐ Correct and relevan	t physics
Scientific approach	☐ Scientific approach		☐ Scientific approach	
Validity of conclusions	process.	☐ Validity of conclusions ☐ Valid		
Accurate answers	☐ Accurate answers	game-devicement-to-foldersamssommungs-querg	☐ Accurate answers	
resentation ±1	Presentation ±1		Presentation ±1	j

Clear and understandable Appropriate manner

☐ Overall impression

Reporter ±1

Quality of experimental technique(s)

☐ Structure

Explanation of formulae and symbols

☐ Appropriate models, conformity of dimensions

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

References, proper citations of ideas and input of others

☐ Novelty of the report

☐ Contribution to the discussion

☐ Clear and understandable

☐ Appropriate manner

☐ Overall impression

Opponent ±1

Response to the reporter's solution

☐ Shows the strong and weak points of the report

Finds shortcomings or errors in the report

☐ Relevance of the questions

☐ Contribution to the discussion

☐ 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

Draws attention to points missed by the reporter or the opponent

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

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Final Grade: Opponent

Final Grade: Reviewer

Final Grade: Reporter

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Scoring Guideli	Fight (Round no.): Round no.): Round no.	om: Stage: Problem no.:
application of appropriate mathematics • 1	easonable experimental technique to gather ar experimental findings to draw suitable conclu	n explanation of the observed phenomena • an and record data (or demonstrate the phenomena if issions • an attempt to communicate difficult or
An opposition should show that: • the opponent challenged the reporter's u appropriate mathematics presented • the opponent appreciated and highlighted the st	nderstanding of the presented concepts, theori apponent critiqued the experimental technique	es and principles • the opponent understood the used and questioned the validity of the data • the
such personal opinions were informative, no principles and appropriate mathematics use. The grade for each of the three teams. The reporter, opponent and reviewer. Consider the following suggestions to	sial ones) • the reviewer's personal opinion wa contrivial and demonstrated, where possible, the ed by the reporter and the opponent consists of a partial grade for physics, prese each start with 5 points. add to or deduct from the initial 5 points.	
Select each partial grade from each se Don't punish missing 'answers' when received the Don't punish missing by th	ction and write it in the corresponding box. no questions were posed or not finding shown of the corresponding box. Opp.: RUSSIA 5	tcomings if there were none to find. Rev.: CZECH Rep.
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

70,7

Quality of experimental technique(s)

☐ Structure

Explanation of formulae and symbols

Appropriate models, conformity of dimensions

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

References, proper citations of ideas and input of others

Novelty of the report

Final Grade: Reporter

☐ Contribution to the discussion

Opponent ±1

0,5

Response to the reporter's solution

Shows the strong and weak points of the report

Finds shortcomings or errors in the report

E Relevance of the questions

Final Grade: Opponent

☐ Contribution to the discussion

Reviewer ±1



Expresses own opinion about topics presented or discussed

Relevance of questions to both the reporter and the opponent

☐ Draws attention to points missed by the reporter or the opponent

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

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Final Grade: Reviewer



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

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500	ring	Gu	iide	lines	luror:	Nout

	Stage:	2	Probler	m no.:	2
Signatur	a. (1/	A .		

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

tion and write it in the corresponding box. o questions were posed or not finding shortco	omings if there were none to find.		
Opp.: Russia 5	Rev.: Czech Republic 5		
Physics ±3	Physics ±3 +1		
E Correct and relevant physics	Correct and relevant physics		
E Scientific approach			
☐ Validity of conclusions	☐ Validity of conclusions		
☐ Accurate answers	☐ Accurate answers		
Presentation ±1	Presentation ±1		
☐ Clear and understandable	E Clear and understandable		
☐ Appropriate manner	- Appropriate manner		
Overall impression	Overall impression		
Opponent ±1	Reviewer ±1 +1		
Response to the reporter's solution	Provides a thorough review of report and discussion		
Shows the strong and weak points	☐ Expresses own opinion about		
,	topics presented or discussed		
	Relevance of questions to both the reporter and the opponent		
	Draws attention to points missed		
Contribution to the discussion	by the reporter or the opponent		
	This sheet will be collected by the fight assistant, so we can scan it and		
	archive your partial grades		
	do not bend		
	o questions were posed or not finding shorted or questions which is a special shorted or not finding shorted or questions which is a special shorted or not find in the report of the strong and weak points of the report of the questions were posed or not finding shorted or not find shorted		

Final Grade: Opponent

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

