Scoring Guidelines	Fight (Round no.): 2 Room: 7 Stage: 1 Problem no.: 3 Juror: 40 ng Jung Signature: 1					
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:

important aspects (especially the controvers	tive summary of the performances the reporter sial ones) • the reviewer's personal opinion was in the trivial and demonstrated, where possible, the red by the reporter and the opponent	evidence (not just superficial observations)
 The reporter, opponent and reviewer of the consider the following suggestions to select each partial grade from each second 	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. To questions were posed or not finding shortcom.	
Rep.: Slovenia 5	Opp.: Bulgaria 5	Rev.: Lenya 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	Presentation ±1 ☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression
Reporter ±1 Quality of experimental technique(s) lade of the decision of formulae and symbols Appropriate models, conformity of dimensions	Opponent ±1 Response to the reporter's solution Shows the strong and weak points of the report Finds shortcomings or errors in the report Relevance of the questions	Reviewer ±1 Provides a thorough review of report and discussion Expresses own opinion about topics presented or discussed Relevance of questions to both the reporter and the opponent Draws attention to points missed
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	☐ 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 – please 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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	Fight (Round no.): 2 Room	m: Stage: Problem no.:
Scoring Guideli	nes Juror: Helmann Klein	Signature:
A report should include:		
application of appropriate mathematics • i	ots, theories and principles of the problem • an eleasonable experimental technique to gather and experimental findings to draw suitable conclusion adule manner	record data for 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 st	nderstanding of the presented concepts, theories apponent critiqued the experimental technique use	and <i>principles</i> • the opponent understood the ed and questioned the <i>validity</i> of the <i>data</i> • the
A review should show that:		
important aspects (especially the controver	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, 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.: Slovolace 5	Opp.: Bulgarier 5	Rev.: Komya 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
	2 / recurate 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
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	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

Scoring Guidelines	Fight (Round no.): 2 Room: Juror: G. JENNINGS	Stage:	Problem no.: 3
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.

 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.: Slovenia 5	Opp.: Bulgaria 5	Rev.: Kenya. 5				
Physics ±3 -2	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 0.5	Presentation ±1	Presentation ±1 +0.5				
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 +0'\$				
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion				
Structure	☐ Shows the strong and weak points					
p-referred	- ariona cue acione and weak bouit?	☐ Expresses own opinion about				
	of the report	 Expresses own opinion about topics presented or discussed 				
symbols Appropriate models conformity	of the report Finds shortcomings or errors in the report	topics presented or discussed Relevance of questions to both the reporter and the opponent				
	of the report Finds shortcomings or errors in	Relevance of questions to both the reporter and the opponent				
symbols Appropriate models, conformity	of the report Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent				
symbols Appropriate models, conformity of dimensions Slides, on-site experiments, audio.	of the report 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 by the reporter or the opponent				
symbols Appropriate models, conformity of dimensions Slides, on-site experiments, audio, video, as appropriate	of the report 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 by the reporter or the opponent This sheet will be collected by the				
symbols Appropriate models, conformity of dimensions Slides, on-site experiments, audio, video, as appropriate References, proper citations of ideas and input of others	of the report 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 by the reporter or the opponent				

			Fight (Ro	und no.):	2Roor	m·	Sta	de:	Problem	m.no. (3
Scoring	g Guideli	nes			HEE					1110
apprication of app appropriate) • lin	Ild include: of the appropriate conceptoropriate mathematics of theoretical and an effective and understar	easonable e experimenta	xperimental I findings to	l technique i	to <i>aather</i> and	record d	lata (or a	lemonstrate	the nho	namena if
• the opponent ch appropriate mathe	ashould show that: allenged the reporter's uematics presented • the content of the state of the	<i>nderstandin</i> pponent <i>crit</i>	i qued the ex	xperimental	l technique use	and <i>prin</i> ed and qu	nciples • uestione	the oppone d the <i>validit</i>	nt under γ of the α	rstood the data • the
such personal opin	Ild show that: ceeded in giving an obje (especially the controver ions were informative, no copriate mathematics use	<i>sial</i> ones) ⊛ t on-trivial and	the reviewer d demonstra	r's <i>personal</i> ited, where	opinion was in possible, the r	n eviden	ce (not i	ict cunorfici	ial obcan	untinnel a
The reporter, oConsider the foSelect each par	ach of the three teams pponent and reviewer llowing suggestions to tial grade from each se issing 'answers' when r	each <i>start i</i> <i>add</i> to or <i>d</i> ction and w	with 5 poin leduct from vrite it in th	i ts . In the initial Ine correspo	5 points.					V.
Rep.:	5	Орр.	© ORGANISM STATE OF THE CONTROL OF T	#Add Artificial Communication (Company of the Annual Company of th	5	Rev	V . *		oleksiki (ACTIVA) vii kultuude esi	5
Physics ±3 Correct and responding to the point of the po	nclusions	☐ Scie		nclusions	nysics		Scientifi /alidity	3 and relevance approace of concluse answers	h sions	rsics
Presentation: Clear and und Appropriate n Overall impres	±1 O erstandable	Preser ☐ Clea ☐ App	ntation :	±1 Ierstandab nanner	O	Pres	s enta t Elear an	tion ±1 d underst tiate manr	andable ner	
Reporter ±1	1		ient ±1		0		iewer	•	Communication of the Communica	1
Quality of exp technique(s)	erimental	☐ Resp	onse to th	he rep ort e	er's	₽-P	rovides eport a	a thorou៖ nd discuss	ı gh revie ion	ew of
☑ Structure☑ Explanation of	formulae and	Show of th	ws the stro e report	ong and w	eak points	d E	xpresse	s own opi esented o	nion ab	out ssed
symbols Appropriate m		Find:	s shortcon eport	nings or e	rrors in	☐ Re	elevano eporter	e of quest and the o	tions to pponer	both the
or aimensions	experiments, audio.			he questic o the discu		由 D by	raws at y the re	tention to porter or	points the opp	missed oonent
	oper citations of							et will be co	1 (781) 2500	
☐ Novelty of the	report						fight assi archive	stant, so we _{Your partial}	grades -	- please

Final Grade: Reporter

Contribution to the discussion

Final Grade: Opponent

do not bend

Canina		Fight (Round no.): Roo	m:bSta	ge: <u>1</u> Pro
Scoring	Guidelines	Juror: Richy REGNER	Signature:	Magn

	Juror: Signature:
A report should include:	
ipplication of appropriate mathematics • reasona	ories and principles of the problem • an explanation of the observed phenomena • an ble experimental technique to gather and record data (or demonstrate the phenomena if the technique to gather and record data (or demonstrate the phenomena if the techniques to draw suitable conclusions • an attempt to communicate difficult or manner
An opposition should show that:	
the opponent challenged the reporter's understand ppropriate mathematics presented the opponent pponent appreciated and highlighted the strength.	nding of the presented concepts, theories and principles • the opponent understood the at critiqued the experimental technique used and questioned the validity of the data • the s and weaknesses of the report
review should show that:	
the reviewer succeeded in giving an <i>objective su</i> **nportant aspects (especially the controversial one succeeded in giving an objective succeeded in giving a	mmary of the performances the reporter and opponent • the reviewer appreciated the is) • 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,

 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.: Slowing 5	Opp.: I lgara 5	Rev.: Kuya Samuer Value 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 ☐ 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 constant assistant assistant, so we constant assistant as			
Contribution to the discussion		do not bend			
Final Grade: Reporter	Final Grade: Opponent 6	Final Grade: Reviewer 6 after IOC feedback and approved by EC on 2011-11-03			

principles and appropriate mathematics used by the reporter and the opponent

		Fight (Round no.): _	Room:	_ Stag
Scoring	Guidelines	Juror: FRANCES	EKWEMASignatu	re· /

Juror: RANCUS ELWENDSignature: Problem no.: 5

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

A report should include:

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

An opposition should show that:

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

A review should show that:

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

 Select each partial grade from each section and write it in the corresponding box. Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find. 						
Rep.: Slovenia 5	Opp.: Bulgaria 5	Rev.: Kenya 5				
Physics ±3 Correct and relevant physics Scientific approach Validity of conclusions	Physics ±3 Correct and relevant physics Scientific approach Validity of conclusions	Physics ±3 Correct and relevant physics Scientific approach Validity of conclusions				
Accurate answers Presentation ±1 Clear and understandable Appropriate manner Overall impression	☐ Accurate answers Presentation ±1 ☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression	☐ Accurate answers Presentation ±1 ☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression				
Reporter ±1 Quality of experimental technique(s)	Opponent ±1 Response to the reporter's solution	Reviewer ±1 Provides a thorough review of report and discussion				
 □ Structure □ Explanation of formulae and symbols □ Appropriate models, conformity of dimensions 	 Shows the strong and weak points of the report Finds shortcomings or errors in the report Relevance of the questions 	 Expresses own opinion about topics presented or discussed Relevance of questions to both the reporter and the opponent Draws attention to points missed by the reporter or the opponent 				
 □ 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 	☐ 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 the second s						

Final Grade: Opponent

	Fight (Round no.):	Room: Stage: Problem no.:
Scoring Guideli	noc /	
	Juror: 170kg Juni	Signature:
A report should include:		
application of appropriate mathematics •	reasonable experimental technique to gather experimental findings to draw suitable cond	an explanation of the observed phenomena • an and record data (or demonstrate the phenomena if clusions • an attempt to communicate difficult or
An opposition should show that • the opponent challenged the reporter's appropriate mathematics presented • the opponent appreciated and highlighted the second	understanding of the presented concepts, theo opponent critiqued the experimental technique	ories and principles • the opponent understood the e used and questioned the validity of the data • the
A review should show that:		
important aspects (especially the controve	<i>rsial</i> ones) • the reviewer's <i>personal opinion v</i> non-trivial and demonstrated, where possible, t	rter and opponent • the reviewer appreciated the vas in evidence (not just superficial observations) • the reviewer's understanding of concepts, theories,
 The reporter, opponent and reviewer Consider the following suggestions to Select each partial grade from each se 	o add to or deduct from the initial 5 points. ection and write it in the corresponding bo no questions were posed or not finding sh	x. ortcomings if there were none to find.
Rep.: Bulgaria 5	Opp.: Kenya 5	Rev.: Stovenia 5
Physics ±3	Physics ±3	Physics ±3
Correct and relevant physics	☐ Correct and relevant physics	☐ Correct and relevant physics
Scientific approach	Scientific approach	☐ Scientific approach
☐ Validity of conclusions ☐ Accurate answers	☐ Validity of conclusions	☐ Validity of conclusions
Accurate answers	Accurate answers	Accurate answers
Presentation ±1	Presentation ±1	☐ Presentation ±1
Clear and understandable	Clear and understandable	Clear and understandable
☐ Appropriate manner	Appropriate manner	Appropriate manner
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 poir 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 77	Relevance of the questions	reporter and the opponent Draws attention to points missed
Slides, on-site experiments, audio, video as appropriate	☐ Contribution to the discussion	by the reporter or the opponent
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report		archive your partial glades in
Contribution to the discussion		do not bend

Final Grade: Opponent

Final Grade: Reporter

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							CONTRACTOR OF THE PARTY OF THE												

Fight (Round no.): 2	Room: F	Stąge:	Problem no.:
Juror: PERMAN N	Klom Signat	ure:	Why

• 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,

Final and appropriate mathematics use	a by the reporter and the opponent	
 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>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.: Bulgavia 5	Opp.: Konya 5	Rev.: Slovakac 5
Physics ±3	Physics ±3	Physics ±3
☐ Correct and relevant physics☐ Scientific approach☐ Validity of conclusions	☐ Correct and relevant physics ☐ Scientific approach ☐ Validity of conclusions	☐ Correct and relevant physics ☐ Scientific approach
Accurate answers	☐ Validity of conclusions ☐ Accurate answers	☐ Validity of conclusions ☐ Accurate answers
Presentation ±1	Presentation ±1	Presentation ±1
Clear and understandableAppropriate mannerOverall impression	☐ Clear and understandable☐ Appropriate manner☐ Overall impression	☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression
Reporter ±1	Opponent ±1	Reviewer ±1
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
☐ Structure ☐ Explanation of formulae and	Shows the strong and weak points of the report	Expresses own opinion about topics presented or discussed
symbols Appropriate models, conformity	Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent
of dimensions Slides, on-site experiments, audio,	☐ 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	— contribution to the discussion	This sheet will be collected by the
Novelty of the report		fight assistant, so we can scan be a archive your partial grades — please
Contribution to the discussion		do not bend
	F. 3	· photogrammamamamamamamamamamamamamamamamamama

Final Grade: Reporter

Final Grade: Opponent

Final Grade: Reviewer

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

Scoring Guidelines	Fight (Round no.): 2 Room: F Stage: 2 Problem no.: Juror: G. JENNING: Signature: C. Stage: 2 Problem no.:
application of appropriate mathematics • reasonable e	and principles of the problem • an explanation of the observed phenomena • an experimental technique to gather and record data (or demonstrate the phenomena if all findings to draw suitable conclusions • an attempt to communicate difficult or neer

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

 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: Slovakia 	ons) = eories,
Rep.: Bulgaria 5 Opp.: Kenya 5 Rev.: Slovakia	
1 III.	5
Physics ±3	- ADDITION OF THE PROPERTY OF
☐ Correct and relevant physics ☐ Correct and relevant physics ☐ Correct and relevant physics	S
☐ 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	05
☐ 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	2,0
Quality of experimental Response to the reporter's technique(s) Response to the reporter's solution Provides a thorough review report and discussion	of
☐ Structure ☐ Shows the strong and weak points ☐ Expresses own opinion about	t
☐ Explanation of formulae and symbols ☐ Finds shortcomings or errors in ☐ Relevance of questions to be	d
Appropriate models, conformity of dimensions the report reporter and the opponent Relevance of the questions Draws attention to points m	
Slides, on-site experiments, audio, video, as appropriate Contribution to the discussion by the reporter or the oppor	ient
References, proper citations of ideas and input of others References, proper citations of this sheet will be collected by the can see it.	+ha
ideas and input of others Novelty of the report This sheet will be a fight assistant, so we can scan it archive your partial grades - pl	and
Contribution to the discussion do not bend	

Final Grade: Reporter

Final Grade: Opponent



Scoring Guidelines	Fight (Round no.): 2 Room: F Stage: 2 Problem no.: 1
A roport 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.

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Final Grade: Reporter

- 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. 50 Rep.: Rev.: 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 **田** Appropriate manner ☐ Appropriate manner Appropriate manner Overall impression ☐ Overall impression ☐ Overall impression Reporter ±1 Opponent ±1 Reviewer ±1 母 Quality of experimental Response to the reporter's Provides a thorough review of technique(s) solution report and discussion **Structure** Shows the strong and weak points Expresses own opinion about of the report topics presented or discussed 田 Explanation of formulae and symbols Finds shortcomings or errors in Relevance of questions to both the reporter and the opponent the report ☐ 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, ☐ Contribution to the discussion video, as appropriate 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

Final Grade: Opponent

Scoring	G	ui	d	e			n	e	5
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Fight (Round no.):	Z Room:	Stag	e: <u>2</u>	Problem no.:	
Juror: RICLY	REGNER	Signature:	Ma	~~	

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

A report should include:

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

An opposition should show that:

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

A review should show that:

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

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 The reporter, opponent and reviewer e Consider the following suggestions to 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> ction and <i>write it</i> in the corresponding box. To questions were posed or not finding shorted	
Rep.: Bulgaria Mon did Holmar 5	Opp.: Many 2 5	Rev.: Slower 5 Goes per Round 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
Explanation of formulae and symbols	☐ Finds shortcomings or errors in	topics presented or discussed
Appropriate models, conformity	the report	Relevance of questions to both the reporter and the opponent
of dimensions	☐ Relevance of the questions	Draws attention to points missed by the reporter or the opponent
Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	by the reporter or the opponent
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and
Novelty of the report		fight assistant, so we con- archive your partial grades — please
☐ Contribution to the discussion		do not bend
Final Grade: Reporter	Final Grade: Opponent	Final Grade: Reviewer

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Samuel P	CO	#	8	9 9	4		M		M		Ø		"		2
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Fight (Round no.): 2	Room: F	Stage: 2	Problem no.: 1	
Juror: FRANCO EX	<u>VZM7</u> /4Signatu	re: // /	4/00/	

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

An opposition should show that:

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

A review should show that:

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

 Select each partial grade from each sec 	each start with 5 points. add to or deduct from the initial 5 points. ction and write it in the corresponding box. O questions were posed or not finding shorted	
Rep.: Bulgania 5	Opp.: Kenye 5	Rev.: Slovema 5
Physics ±3	Physics ±3	Physics ±3
☐ Correct and relevant physics☐ Scientific approach☐ Validity of conclusions☐ Accurate answers	☐ Correct and relevant physics☐ Scientific approach☐ Validity of conclusions☐ Accurate answers	 □ Correct and relevant physics □ Scientific approach □ Validity of conclusions □ Accurate answers
Presentation ±1	Presentation ±1	Presentation ±1
☐ Clear and understandable☐ Appropriate manner☐ Overall impression	☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression	☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression
Reporter ±1	Opponent ±1	Reviewer ±1
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
☐ Structure	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		archive your partial grades
Contribution to the discussion		do not bend

		Fight (Round no.): Room: Stage:	
Scorina	Guidelines	1/ 01120	
		Juror: /the July Signature:	ě

Д	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.: 5	Opp.: 5	Rev.: 5				
Physics ±3 Correct and relevant physics Scientific approach	Physics ±3 ☐ Correct and relevant physics ☐ Scientific approach	Physics ±3 Correct and relevant physics				
☐ Validity of conclusions ☐ Accurate answers	☐ Validity of conclusions ☐ Accurate answers	☐ Scientific approach☐ Validity of conclusions☐ Accurate answers				
Presentation ±1 ←25 ☐ 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 Quality of experimental technique(s)	Opponent ±1 Response to the reporter's solution	Reviewer ±1 Provides a thorough review of report and discussion				
☐ Structure ☐ Explanation of formulae and symbols	Shows the strong and weak points of the report Finds shortcomings or errors in the report	Expresses own opinion about topics presented or discussed Relevance of questions to both the 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



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Fight (Round no.):	Room:		itage: <u>3</u>	_ Problem no.:	8
Juror: KYMUNN	Main	Signature:	Makesa	128/11	

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

An opposition should show that:

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

A review should show that:

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

 The reporter, opponent and reviewer of the Consider the following suggestions to the Select each partial grade from each second to the Consider the following suggestions to the Consider the following suggestions to the Consider the following suggestions to the Consider the Consider the following suggestions to the Consider the Consideration the	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. o questions were posed or not finding shortc	
Rep.: <u>Vernya</u> 5	Opp.: Slovakai 5	Rev.: Bulgaria 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)Structure	☐ Response to the reporter's solution☐ Shows the strong and weak points	Provides a thorough review of report and discussion
Explanation of formulae and symbolsAppropriate models, conformity	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
of dimensions Slides, on-site experiments, audio, video, as appropriate	☐ Relevance of the questions☐ Contribution to the discussion	Draws attention to points missed by the reporter or the opponent
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and
Novelty of the report Contribution to the discussion		fight assistant, so the please archive your partial grades – please do not bend

Final Grade: Reporter

Final Grade: Opponent

	Fight (Round no.)): Rooi	m: <u>F</u> Stage: <u>3</u> Pi	roblem_no.:
Scoring Guideling	nes Juror: A.	0	Signature:	
				
A report should include:				
• a presentation of the appropriate concept application of appropriate mathematics • reappropriate) • linking of theoretical and examplex ideas in an effective and understant	easonable experimental techniq experimental findings to draw :	ue to <i>aather</i> and	record data (or demonstrate th	e nhenomena 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 $lpha$	i tal technique use	and <i>principles</i> • the opponent ed and questioned the <i>validity</i> o	understood the f the <i>data</i> • the
A review should show that:				
 the reviewer succeeded in giving an object important aspects (especially the controver, such personal opinions were informative, no principles and appropriate mathematics use 	sial ones) • the reviewer's <i>perso</i> l on-trivial and demonstrated, whe	<i>nal opinion</i> was in tre possible, the r	n evidence Inat just conecticial.	observations) -
The grade for each of the three teams The reporter, opponent and reviewer Consider the following suggestions to Select each partial grade from each see Don't punish missing 'answers' when re	each <i>start with 5 points.</i> add to or deduct from the init ction and write it in the corres	tial 5 points .		
Rep.: Kenya	Opp.: Slovalcia		Λ .	
Sep 5	Upp.: Storalcia	5	Rev .: Bulgario	5
Physics ±3 -2	Physics ±3		Physics ±3	
Correct and relevant physics	☐ Correct and relevant	physics	☐ Correct and relevan	t physics
Scientific approach	☐ Scientific approach		☐ Scientific approach	- ,
☐ Validity of conclusions	☐ Validity of conclusion	าร	☐ Validity of conclusio	ns
Accurate answers	☐ Accurate answers		☐ Accurate answers	
Presentation ±1	Presentation ±1	+ 2	Presentation ±1	1
Clear and understandable	Clear and understand	dable	☐ Clear and understan	dable
J Appropriate manner	☐ Appropriate manner		☐ Appropriate manner	1
Overall impression	Overall impression		Overall impression	
Seporter ±1	Opponent ±1	十七	Reviewer ±1	1
J Quality of experimental technique(s)	Response to the repo	rter's	Provides a thorough report and discussion	review of
] Structure	☐ Shows the strong and	weak points	Expresses own opinion	on about
Explanation of formulae and symbols	of the report Finds shortcomings o		topics presented or o	discussed
Appropriate models, conformity of dimensions	the report Relevance of the ques		reporter and the opp	onent
Slides, on-site experiments, audio, video, as appropriate	Contribution to the di		Draws attention to po by the reporter or the	oints missed e opponent
References, proper citations of ideas and input of others			This sheet will be colle	ected by the
Novelty of the report			This sheet will be fight assistant, so we ca archive your partial gra	ides – please

Final Grade: Opponent

 \square Contribution to the discussion

Final Grade: Reporter

Final Grade: Reviewer

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

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Scoring Guidelines	Fight (Round no.): 2 Room: Stage: 3 Problem no.: 8 Juror: BORGIET Signature: 100 ps
A ronget should indud	

Scoring Guideli	nes Juror: BORGIET	Signature: Mbo 45
application of appropriate mathematics •	reasonable experimental technique to gather an experimental findings to draw suitable conclus	explanation of the observed phenomena • and record data (or demonstrate the phenomena if sions • an attempt to communicate difficult or
An opposition should show that • the opponent challenged the reporter's appropriate mathematics presented • the opponent appreciated and highlighted the statement of the state	understanding of the presented concepts, theorie opponent critiqued the experimental technique u	s and principles • the opponent understood the sed and questioned the validity of the data • the
important aspects (especially the controve	ective summary of the performances the reporte rsial ones) • the reviewer's personal opinion was non-trivial and demonstrated, where possible, the ed by the reporter and the opponent	r and opponent • the reviewer appreciated the in evidence (not just superficial observations) • reviewer's understanding of concepts, theories,
 The reporter, opponent and reviewer Consider the following suggestions to Select each partial grade from each set 	o add to or deduct from the initial 5 points. ection and write it in the corresponding box. no questions were posed or not finding short	
Rep.:5	Opp.:5	Rev.: 5
Physics ±3 Correct and relevant physics	Physics ±3 Correct and relevant physics	Physics ±3
Scientific approach	Scientific approach	☐ Correct and relevant physics ☐ Scientific approach
☐ Validity of conclusions	☐ Validity of conclusions	☐ Validity of conclusions
☐ Accurate answers	☐ Accurate answers	☐ Accurate answers
Presentation ±1 -0.5	Presentation ±1	Presentation ±1
Clear and understandable	☐ Clear and understandable	☐ Clear and understandable
☐ Appropriate manner	Appropriate manner	☐ Appropriate manner
U Overall impression	Overall impression	Overall impression
Reporter ±1	Opponent ±1	Reviewer ±1 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	
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	1	by the reporter or the opponent
References, proper citations of ideas and input of others		This sheet will be collected by the

fight assistant, 56 archive your partial grades - please ☐ Novelty of the report \square Contribution to the discussion

Final Grade: Opponent

Final Grade: Reporter

do not bend

Final Grade: Reviewer EC on 2011-11-03

8		Fight (Round no.): Room: Stage: Problem no.
Scoring	Guidelines	Juror: Richy REENER Signature: Mer
		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 no questions were posed or not finding shortcomings if there were none to find. 						
Rep.: Mey 2 5	Opp.: Saune Mahs Wenon 5	Rev.: Belgu e Geograpa Boisoua 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	Presentation ±1	Presentation ±1				
☐ Appropriate manner ☐ Overall impression	☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression	☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression				
Reporter ±1	Opponent ±1	Reviewer ±1				
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion				
☐ Structure ☐ Explanation of formulae and	Shows the strong and weak points of the report	Expresses own opinion about topics presented or discussed				
symbols	Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent				
☐ Appropriate models, conformity of dimensions☐ Slides, on-site experiments, audio,	Relevance of the questions	Draws attention to points missed by the reporter or the opponent				
video, as appropriate	☐ Contribution to the discussion					
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and				
Novelty of the report		archive your partial grades				
Contribution to the discussion		do not bend				

Final Grade: Opponent

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Same.		8	9	層		See	₩.	***				8 8		

Fight (Round no.): _	2 Room: F	Stage: <u>3</u>	_ Problem no.: 8
Juror: FRANCIE	EKWEMIA Signa	ture:	JASTA.

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

A		الماد مسلما	include:
<i>p</i> -4	TEDUIL	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.: Kenye 5	Opp.: Sloven 5	Rev.: Bulgan G 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 topics presented or discussed Relevance of questions to both the reporter and the opponent						
Explanation of formulae and	of the report							
symbols	Finds shortcomings or errors in the report							
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 con archive your partial grades – please						
Contribution to the discussion		do not bend						
Final Grade: Reporter	Final Grade: Opponent	Final Grade: Reviewer						