	· •
SCAPINA (-IIIAO)	INOC
Scoring Guidel	IIICJ

	Fight (Round no.): Roo	m: D Stage: 1 Problem no.: 5
Scoring Guidelin	nes Juror: KUNDRACIK	Signature: () () () ()
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 u appropriate mathematics presented • the co opponent appreciated and highlighted the si	nderstanding of the presented concepts, theories opponent critiqued the experimental technique us	and <i>principles</i> • the opponent understood the ed and questioned the <i>validity</i> of the <i>data</i> • the
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 led by the reporter and the opponent	n evidence (not just superficial observations) •
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	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 shorte	
Rep.: SWEDEX 5	Opp.: SIWGAPORE 5	Rev. : <u>Ctf120</u> t 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

☐ Correct and relevant physics
☐ Scientific approach
☐ Validity of conclusions
☐ Accurate answers
Presentation ±1
☐ Clear and understandable
☐ Appropriate manner
☐ Overall impression

	Validity of conclusions
	Accurate answers
Pr	esentation ±1
	Clear and understandable
	Appropriate manner
	Overall impression
Re	porter ±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

Pł	ysics ±3	4
	Correct and relevant phy	sics
	Scientific approach	
	Validity of conclusions	
	Accurate answers	
Pr	esentation ±1	0,5
	Clear and understandable	9
	Appropriate manner	
	Overall impression	
Op	ponent ±1	-0,5
	Response to the reporter solution	's
	Shows the strong and we of the report	ak points
	Finds shortcomings or err the report	ors in
	Relevance of the question	ıs
П	Contribution to the discus	cion

	Rev.: Ou 1001
	5
	Physics ±3
	☐ Correct and relevant physics
	Scientific approach
	☐ Validity of conclusions
	☐ Accurate answers
2	Presentation ±1 0, T
	Clear and understandable
	Appropriate manner
	☐ Overall impression
	Reviewer ±1
	Provides a thorough review of report and discussion
ints	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
	La control Call 2500
	fight assistant, so we archive your partial grades — please
	do not bend

Final Grade: Reporter

Final Grade: Opponent

Final Grade: Reporter

Cooring Ciridali	Fight (Round no.): Roor	m: Stage: Problem no.:
Scoring Guideling	Juror: OSTERMADI, Florian	Signature: 7. Ostum
application of appropriate mathematics • r	ets, theories and principles of the problem • an easonable experimental technique to gather and experimental findings to draw suitable conclusions and the conclusions of the problem of the conclusions of the conclus	record data (or demonstrate the phenomena if
An opposition should show that: • the opponent challenged the reporter's unappropriate mathematics presented • the opponent appreciated and highlighted the st	nderstanding of the presented concepts, theories pponent critiqued the experimental technique use	and <i>principles</i> • the opponent understood the ed and questioned the <i>validity</i> of the <i>data</i> • the
important aspects (especially the controvers	ctive summary of the performances the reporter sial ones) • the reviewer's personal opinion was in portrivial 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 shorto	
Rep.: 5 5	Opp.: Sigapone 5	Rev.: (hing 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 ☐ Validity of conclusions
Accurate answers Presentation +1	☐ Accurate answers	☐ Accurate answers
riesentation 11	Presentation ±1	Presentation ±1
Clear and understandable	☐ Clear and understandable	☐ Clear and understandable
☐ Appropriate manner☐ Overall impression	☐ Appropriate manner ☐ Overall impression	☐ Overall impression
Reporter ±1 -0,5	Opponent ±1	Reviewer ±1 tois
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 Draws attention to points missed
Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	by the reporter or the opponent
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report		fight assistant, so we con- archive your partial grades – piease
Contribution to the discussion		do not bend

Final Grade: Opponent

Scoring Guideli		n: D Stage: 1 Problem no.: 3			
	nes Juror: Nirut Russader	Signature:			
application of appropriate mathematics • 1	ots, theories and principles of the problem • an a easonable experimental technique to gather and experimental findings to draw suitable conclusion adable manner	record data (or demonstrate the phenomena if			
An opposition should show that: • the opponent challenged the reporter's 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 controver	ctive summary of the performances the reporter sial ones) • the reviewer's personal opinion was in pon-trivial and demonstrated, where possible, the red ty 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</i> , <i>presen</i> each <i>start with 5 points</i> . <i>add</i> to or <i>deduct</i> from the initial <i>5 points</i> . ction and <i>write it</i> in the corresponding box. no questions were posed or not finding shortc				
Rep.: Such	Opp.: Singapore 5	Rev.: China 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 ☐ Explanation of formulae and	Shows the strong and weak points of the report	Expresses own opinion about topics presented or discussed			
symbols Appropriate models, conformity	Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent			
of dimensions	Relevance of the questions	☐ Draws attention to points missed			
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			

Contribution to the discussion

☐ Novelty of the report

Final Grade: Opponent

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

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Cantina	Cuidalina	Fight (R	Round no.): _	<u> </u>	Room:	<u> </u>	Stage:		F
Scoring	Guidelines	Juror:	ROR	MET	_	Signature	٠.	12	/

Scoring Guideni	Juror: RORMET	_ Signature: Signature:
application of appropriate mathematics • re	ets, theories and principles of the problem • an eleasonable experimental technique to gather and experimental findings to draw suitable conclusionable manner	record data (or demonstrate the phenomena if
An opposition should show that: • the opponent challenged the reporter's unappropriate mathematics presented • the opponent appreciated and highlighted the state.	nderstanding of the presented concepts, theories pponent critiqued the experimental technique use	and <i>principles</i> • the opponent understood the ed and questioned the <i>validity</i> of the <i>data</i> • the
important aspects (especially the controvers	ctive summary of the performances the reporter sial ones) • the reviewer's personal opinion was intrivial and demonstrated, where possible, the red by the reporter and the opponent	n evidence (not just superficial observations) .
 The reporter, opponent and reviewer e Consider the following suggestions to e Select each partial grade from each sec 	consists of a partial grade for <i>physics, presen</i> 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 shorts.	
Rep.:	Opp.:	Rev.: 5
Physics ±3 Correct and relevant physics Scientific approach Validity of conclusions Accurate answers	Physics ±3 Correct and relevant physics Scientific approach Validity of conclusions Accurate answers	Physics ±3 Correct and relevant physics Scientific approach Validity of conclusions Accurate answers
Presentation ±1 Clear and understandable Appropriate manner Overall impression	Presentation ±1	Presentation ±1 Clear and understandable Appropriate manner Overall impression
Reporter ±1 Quality of experimental	Opponent ±1 Response to the reporter's	Reviewer ±1
technique(s) Structure Explanation of formulae and symbols Appropriate models, conformity of dimensions	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
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

Final Grade: Opponent





	Fight (Round no.): Roor	m: Stage: Problem no.:
Scoring Guidelin	1es Juror: FRANCISCO	Λ _ 0 _
-	SWAMINATHA	V.
A report should include:		
application of appropriate mathematics • r	ts, theories and principles of the problem • an eleasonable experimental technique to gather and experimental findings to draw suitable conclusionable manner	record data (or demonstrate the phenomena if
An opposition should show that: • the opponent challenged the reporter's us appropriate 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 trivial and demonstrated, where possible, the red by the reporter and the opponent	n evidence (not just superficial 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 	consists of a partial grade for <i>physics</i> , <i>presen</i>	
	ı	
Rep.: SNEDEN 5	Opp.: Singit Pore 5	Rev.: CHINA 5
Physics ±3	Physics ±3	Physics ±3
Correct and relevant physics Scientific approach	☐ Correct and relevant physics ✓	Correct and relevant physics
Scientific approach	☐ Scientific approach	☐ Scientific approach
☐ Validity of conclusions	☐ Validity of conclusions	☑ Validity of conclusions
☐ Accurate answers ?	☐ Accurate answers	☐ Accurate answers
Presentation ±1	Presentation ±1	Presentation ±1
☑ Clear and understandable	☐ Clear and understandable	Clear and understandable
♂ Appropriate manner	☐ Appropriate manner	Appropriate manner
Overall impression	Overall impression	☐ Overall impression
Reporter ±1	Opponent ±1	Reviewer ±1
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
Structure	Shows the strong and weak points of the report	Expresses own opinion about topics presented or discussed
	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 triff species.	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 graves
Contribution to the discussion		do not bend

Final Grade: Opponent

Final Grade: Reporter

Scoring Guidelines

Fight (Round no.): Room:	Stage:	: _1_	Problem no.: _	3
Juror: PATRICK SOMAN	Signature:	PJ.	Roade	annual annual 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:

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

Final Grade: Opponent

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

		Fight (Round no.): Room	: <u>ユノ</u> Stage
Scoring	Guidelines	Juror: KUNDRAGK	
		Juror: _KUODIKHUK	Signature: (

Room:	<u></u> S	stage: _ <u> </u>	– Problem i	no.: <i>_</i>
ror: KUNDRAUK	Signature:	Lle	ULL	is-

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.
- Coloct each partial grade f

 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.: <u>SINGAPORE</u> 5	Opp.: <u>CHIVA</u> 5	Rev.: 900000 5						
Physics ±3	Physics ±3	Physics ±3						
☐ Correct and relevant physics ☐ Scientific approach	☐ Correct and relevant physics☐ Scientific approach	☐ Correct and relevant physics						
☐ Validity of conclusions	☐ Validity of conclusions	☐ Scientific approach ☐ Validity of conclusions						
Accurate answers	Accurate answers	Accurate answers						
Presentation ± 1	Presentation ±1	Presentation ±1						
☐ Clear and understandable	☐ Clear and understandable	☐ Clear and understandable						
☐ Appropriate manner	☐ Appropriate manner	☐ Appropriate manner						
Overall impression	Overall impression	☐ Overall impression						
Reporter ±1 0,5	Opponent ±1	Reviewer ±1 +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	☐ Expresses own opinion about						
☐ Explanation of formulae and	of the report	topics presented or discussed						
symbols	Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent						
Appropriate models, conformity of dimensions	☐ Relevance of the questions	☐ Draws attention to points missed						
Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	by the reporter or the opponent						
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and						
☐ Novelty of the report		fight assistant, so we con archive your partial grades – please						
☐ Contribution to the discussion	· · · · · · · · · · · · · · · · · · ·	do not bend						
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Final Grade: Reporter

Final Grade: Opponent

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☐ Contribution to the discussion

Final Grade: Reporter

	Fight (Doursdays):	m: D Stage: 2 Problem no.:
Scoring Guidel	Ines Juror: Osteniumen, Florian	
	JUIOI. OSTOTOMIER, FLONTON	Signature
A report should include:		
application of appropriate mathematics	ncepts, theories and principles of the problem • and it • reasonable experimental technique to gather and it is described and experimental findings to draw suitable conclusions tandable manner	record data (or demonstrate the phenomena if
appropriate mathematics presented • th	at: 's understanding of the presented concepts, theories be opponent critiqued the experimental technique us be strengths and weaknesses of the report	and <i>principles</i> • the opponent understood the ed and questioned the <i>validity</i> of the <i>data</i> • the
A review should show that:		
important aspects (especially the contro	bjective summary of the performances the reporter versial ones) • the reviewer's personal opinion was a non-trivial and demonstrated, where possible, the used by the reporter and the opponent	n evidence (not just superficial observations) •
 The reporter, opponent and review Consider the following suggestions Select each partial grade from each 	ms consists of a partial grade for <i>physics, presenter</i> each <i>start with 5 points</i> . It to <i>add</i> to or <i>deduct</i> from the initial <i>5 points</i> . It is section and <i>write it</i> in the corresponding box. It is no questions were posed or not finding shorter.	
Rep.: Singapore 5	Opp.: China 5	Rev.: Sweden 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 \bigcirc
 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 th reporter and the opponent
Appropriate models, conformity		generating.
of dimensions Slides, on-site experiments, audivideo, as appropriate	Relevance of the questions o, 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 control fight assistant, as a single fight assistant as a single fight assistant as a single fight a

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.):	n: D Stage: 2 Problem no.: 9							
Scoring Guidelin	1es Juror: Nint Pussonder								
application of appropriate mathematics • re	ts, theories and principles of the problem • an e easonable experimental technique to gather and i xperimental findings to draw suitable conclusio 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 opponent 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 such personal opinions were informative, no	A review should show that: • the reviewer succeeded in giving an objective summary of the performances the reporter and opponent • the reviewer appreciated the important aspects (especially the controversial ones) • the reviewer's personal opinion was in evidence (not just superficial observations) • such personal opinions were informative, non-trivial and demonstrated, where possible, the reviewer's understanding of concepts, theories, principles and appropriate mathematics used by the reporter and the opponent								
 The grade for each of the three teams consists of a partial grade for physics, presentation and for their specific role. The reporter, opponent and reviewer each start with 5 points. Consider the following suggestions to add to or deduct from the initial 5 points. Select each partial grade from each section and write it in the corresponding box. Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find. 									
Rep.: Singapore 5	Opp.: China 5	Rev.: Sweden 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							
Appropriate models, conformity of dimensions	Relevance of the questions	reporter and the opponent Draws attention to points missed							
Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	by the reporter or the opponent							
References, proper citations of ideas and input of others		This sheet will be collected by the							

☐ Contribution to the discussion

☐ Novelty of the report

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.): Room:	<u> </u>
Scoring	Guidelines	War BORGEL	C!

BORGEE Signature: Problem no.:

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

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

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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

our change missing answers when in	o questions were posed of flot finding shorter	omings if there were none to find.
Rep.:	Opp.: 5	Rev.: 5
Physics ±3	Physics ±3	Physics ±3 0.5
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 0.5	Presentation ±1	Presentation ±1
Clear and understandable	Clear and understandable	☐ Clear and understandable
Appropriate manner	Appropriate manner	Appropriate manner
Overall impression	☐ Overall impression	Overall impression
Reporter ±1	Opponent ±1	Reviewer ±1
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
Structure	Shows the strong and weak points of the report	Expresses own opinion about topics presented or discussed
Explanation of formulae and symbols	Finds shortcomings or errors in the report	Relevance of questions to both the 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	' 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
\square Contribution to the discussion $-$		do not bend

Final Grade: Opponent

Scoring Guidelii	npc	n:_PStage:2_Problem no.:9
	Juror: FRANCISCO SCNAMINATHON	Signature:
A report should include:	SENAMINATHAN	
application of appropriate mathematics • re	ets, theories and principles of the problem • an eleasonable experimental technique to gather and its 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 d and questioned the <i>validity</i> of the <i>data</i> • the
A review should show that:		
 the reviewer succeeded in giving an objection 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 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. no questions were posed or not finding shortco	
Rep.: SINGAPORE 5	Opp.: CtiNA 5	Rev.: SWEDEN 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 Form	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	Containation to the discussion	
References, proper citations of ideas and input of others		This sheet will be collected by the

Novelty of the report

☐ Contribution to the discussion

Final Grade: Opponent

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Fight (Round no.): 3 Room: 5 Stage: 2	Problem no.:
Juror: PATRICIC SOUDAN Signature: PM	for Cy

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.
- Soloct anch partial arada f

	ction and <i>write it</i> in the corresponding box. To questions were posed or not finding shortc	omings if there were none to find.
Rep.: 5/ NO APORE 5	Орр.: СМІМА 5	Rev.: 36 FDFN 5
Physics ±3 Correct and relevant physics	Physics ±3 Correct and relevant physics	Physics ±3 Correct and relevant physics
✓ Scientific approach✓ Validity of conclusions✓ Accurate answers	✓ Scientific approach✓ Validity of conclusions✓ Accurate answers	☐ Scientific approach ☐ Validity of conclusions ☐ Accurate answers
Presentation ±1	Presentation ±1	Presentation ±1
☐ Clear and understandable☐ Appropriate manner☐ Overall impression	☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression	☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression
Reporter ±1	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, 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 obtained archive your partial grades – please
☐_Contribution to the discussion		do not bend
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Final Grade: Opponent

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Fight (Round no.):	Room:	<u>D</u>	Stage:	3	Problem no.: _	4
Juror: KUNDRALIK		Signature	a:	the	ang (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:

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.

 Select each partial grade from each sec 	add to or deduct from the initial 5 points. ition and write it in the corresponding box. o questions were posed or not finding shortco	omings if there were none to find.
Rep.: <u>OHINA</u> 5	Opp.: 300000 5	Rev.: 3NG-AP-ORE 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 +0.5	Presentation ±1	Presentation ±1
☐ Clear and understandable	☐ Clear and understandable	☐ Clear and understandable
☐ Appropriate manner	☐ Appropriate manner	☐ Appropriate manner
Overall impression	☐ Overall impression	Overall impression
Reporter ±1	Opponent ±1	Reviewer ±1
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
☐ Structure	☐ Shows the strong and weak points	Expresses own opinion about
☐ Explanation of formulae and	of the report	topics presented or discussed
symbols Appropriate models, conformity	Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent
of dimensions	☐ Relevance of the questions	☐ Draws attention to points missed
Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	by the reporter or the opponent
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report		fight assistant, so we com- archive your partial grades – please
Contribution to the discussion		do not bend
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Final Grade: Opponent

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Final Grade: Reporter

Scoring Guideli	noc	m: Stage:3 Problem no.: Signature:{
A soposé chould include		
A report should include:	man Abrandan and Color Color	
application of appropriate mathematics •	pts, 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 appropriate mathematics presented • the opponent appreciated and highlighted the second	<i>understanding</i> of the presented <i>concepts, theories</i> opponent <i>critiqued</i> the <i>experimental technique</i> 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 controve	ective summary of the performances the reporter rsial ones) • the reviewer's personal opinion was i on-trivial and demonstrated, where possible, the red ed 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 Don't punish missing 'answers' when Rep.: Chana	eadd to or deduct from the initial 5 points. Extraction and write it in the corresponding box. The property of the corresponding shorts of the	comings if there were none to find.
5 5	5	5
Physics ±3	11175105	Physics ±3
☐ Correct and relevant physics ☐ Scientific approach	☐ Correct and relevant physics	☐ Correct and relevant physics
☐ Validity of conclusions	Scientific approach	☐ Scientific approach
Accurate answers	☐ Validity of conclusions ☐ Accurate answers	☐ Validity of conclusions
— / leedi ate 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 +0,5
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		This sheet will be collected by the
ideas and input of others		This sheet will so we can scan it and

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

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					March 1										

	Fight (Round no.):	m: D Stage: 3 Problem no.: 4
Scoring Guidelin	nes Juror: Ninut Russandee	
application of appropriate mathematics • r	ots, theories and principles of the problem • an easonable experimental technique to gather and experimental findings to draw suitable conclusionable manner	record data (or demonstrate the phenomena if
An opposition should show that: • the opponent challenged the reporter's unappropriate mathematics presented • the opponent appreciated and highlighted the st	nderstanding of the presented concepts, theories pponent critiqued the experimental technique 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>)	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) a
 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> . <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 shorto	
Rep.: China 5	Opp.: Sweden 5	Rev.: Singapore 5
Physics ±3 Correct and relevant physics Scientific approach Validity of conclusions Accurate answers	Physics ±3 Correct and relevant physics Scientific approach Validity of conclusions Accurate answers	Physics ±3 ☐ Correct and relevant physics ☐ Scientific approach ☐ Validity of conclusions ☐ Accurate answers
Presentation ±1 ☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression	Presentation ±1 Clear and understandable Appropriate manner Overall impression	Presentation ±1 ☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression
Reporter ±1	Opponent ±1	Reviewer ±1
J 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 th
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

☐ Contribution to the discussion

☐ Novelty of the report

Final Grade: Opponent

Final Grade: Reviewer

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

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	4	
	Fight (Round no.):	Room: D Stage: 3 Problem no.:
Scoring Guidelin	1es Juror: BORGIEI	Signature: LSM o 45
application of appropriate mathematics • re	easonable experimental technique to gather xperimental findings to draw suitable con	• 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 unappropriate mathematics presented • the opponent appreciated and highlighted the st.	oponent <i>critiqued</i> the <i>experimental techniqu</i>	ories and principles • the opponent understood the used and questioned the validity of the data • the
important aspects (especially the controvers	ial ones) • the reviewer's personal opinion value. n-trivial and demonstrated, where possible,	orter and opponent • the reviewer appreciated the was in evidence (not just superficial observations) • the reviewer's understanding of concepts, theories,
 The reporter, opponent and reviewer of the consider the following suggestions to a Select each partial grade from each second 	consists of a partial grade for <i>physics, pre</i> each <i>start with 5 points</i> . add to or <i>deduct</i> from the initial <i>5 points</i> stion and <i>write it</i> in the corresponding boo questions were posed or not finding sho	;; ox.
Rep.:	Opp.: 5	
Physics ±3	Physics ±3 +2	Physics ±3
Correct and relevant physics	Correct and relevant physics	Correct and relevant physics
Scientific approach	Scientific approach	☐ Scientific approach
☐ Validity of conclusions	☐ Validity of conclusions	☐ Validity of conclusions
Accurate answers	☐ Accurate answers	☐ Accurate answers
Presentation ±1	Presentation ±1	Presentation ±1
Clear and understandable	Clear and understandable	☐ Clear and understandable
Appropriate manner	Appropriate manner	Appropriate manner
Overall impression	Overall impression	Overall impression
	- Commission of the Commission	MANAGEMENT AND

Presentation ±1

☐ Overall impression



Quality of experimental technique(s)

☐ Structure

Reporter ±1

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

Opponent ±1

☐ Response to the reporter's solution

Shows the strong and weak points of the report

Finds shortcomings or errors in the report

Relevance of the questions

☐ Contribution to the discussion

Reviewer ±1

Provides a thorough review of report and discussion

Expresses own opinion about topics presented or discussed

Relevance of questions to both the reporter and the opponent

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

Final Grade: Reporter

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	4
* *	Fight (Round no.): 3 Room: D Stage: 3 Problem no.: 44
ines	Juror: RANCESED Signature: SWAMINATHAN
	SWAMINATHAN
• reasonable	s and principles of the problem • an explanation of the observed phenomena • an experimental technique to gather and record data (or demonstrate the phenomena if al findings to draw suitable conclusions • an attempt to communicate difficult or ner
at:	
s understandir e opponent cr	ng of the presented concepts, theories and principles • the opponent understood the itiqued the experimental technique used and questioned the validity of the data • the

• a presentation of the appropriate con application of appropriate mathematics appropriate) • linking of theoretical ar complex ideas in an effective and unders

An opposition should show the

• the opponent challenged the reporter appropriate mathematics presented • th opponent appreciated and highlighted the strengths and weaknesses of the report

A review should show that:

Final Grade: Reporter

A report should include:

- 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

	o questions were posed or not finding shortco	omings if there were none to find.						
Rep.: CHIMA 5	Opp.: SWEDEN 5	Rev.: SINGAPORE 5						
Physics ±3	Physics ±3	Physics ±3						
Correct and relevant physics	Correct and relevant physics	☐ Correct and relevant physics						
Scientific approach Bit was forced by	☐ 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						
- Inches	i :	report and discussion						
☐ Structure	Shows the strong and weak points	•						
Explanation of formulae and	Shows the strong and weak points of the report	Expresses own opinion about topics presented or discussed						
Explanation of formulae and symbols	Shows the strong and weak points of the report Finds shortcomings or errors in the report	•						
Explanation of formulae and	of the report Finds shortcomings or errors in	Expresses own opinion about topics presented or discussed Relevance of questions to both the reporter and the opponent						
Explanation of formulae and symbols	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						
Explanation of formulae and symbols Appropriate models, conformity of dimensions Slides, on-site experiments, audio.	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 This sheet will be collected by the						
Explanation of formulae and symbols Appropriate models, conformity of dimensions Slides, on-site experiments, audio, video, as appropriate	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 This sheet will be collected by the						
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	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						

Final Grade: Opponent

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	Fight (Round n	o.): <u>3</u> Rooi	m: Stage: Prob	lem no.:(
Scoring Guide	IINOC		Signature: Pel So					
A report should include: • a presentation of the appropriate con application of appropriate mathematical appropriate) • linking of theoretical accomplex ideas in an effective and understand and appropriate ideas.	s • reasonable experimental techr nd <i>experimental findings</i> to drav	i que to <i>gather</i> and	record data (or demonstrate the pr	henomena if				
An opposition should show th • the opponent challenged the reporter appropriate mathematics presented • the opponent appreciated and highlighted the	<i>'s understanding</i> of the presented ne opponent <i>critiqued</i> the <i>experin</i>	nental technique use	and <i>principles</i> • the opponent unded ed and questioned the <i>validity</i> of th	derstood the				
A review should show that: • the reviewer succeeded in giving an a important aspects (especially the control such personal opinions were informative principles and appropriate mathematics	oversial ones) • the reviewer's per e, non-trivial and demonstrated, w	sonal opinion was i there possible, the r	n evidence (not just superficial obs	ervations) e				
 The grade for each of the three tea The reporter, opponent and review Consider the following suggestions Select each partial grade from each Don't punish missing 'answers' who 	ver each start with 5 points. Is to add to or deduct from the in In section and write it in the cor	nitial <i>5 points.</i> responding box.						
Rep.:	Opp.: Swede	5	Rev.: SiNGAPURO	5				
Physics ±3	Physics ±3	15	Physics ±3	1				
☑ Correct and relevant physics☑ Scientific approach☑ Validity of conclusions☑ Accurate answers	☐ Correct and relevand Scientific approach ☐ Validity of conclus ☐ Accurate answers	ì	 ✓ Correct and relevant physics ☐ Scientific approach ☐ Validity of conclusions ☐ Accurate answers 					
Presentation ±1	Presentation ±1	0,<	Presentation ±1	٥١٢				
☐ Clear and understandable☐ Appropriate manner☐ Overall impression	☐ Clear and understa☐ Appropriate mann☐ Overall impression	er	☐ Clear and understandable☐ Appropriate manner☐ Overall impression					
Reporter ±1	Opponent ±1	Λ	Reviewer ±1	08				

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Rep

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

Final Grade: Reporter

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

Final Grade: Opponent

☑ Contribution to the discussion



Provides a thorough review of report and discussion

Expresses own opinion about topics presented or discussed

Relevance of questions to both the reporter and the opponent

Draws attention to points missed by the reporter or the opponent

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

do not bend