| SHEET, | | @ | | | | 4 | | 7 | 88 | 49 | | | |
|--------|----|----------|-----|---|------|---|---|--|----|----|-----|---|---|
| 4 | CO | | M | M | | | A | 0 | | | n | 0 | C |
| Sant P | | 9 | # 2 | 2 | S. S | 2 | | Service Servic | # | | 1 0 | | J |

| Scoring Guidelin | Fight (Round no.): 3 Roor Nes Juror: J. BALCSMBE | |
|--|--|---|
| application of appropriate mathematics • r | ots, theories and principles of the problem • an energy and easonable experimental technique to gather and experimental findings to draw suitable conclusions and the manner | record data (or demonstrate the phenomena if |
| An opposition should show that: • the opponent challenged the reporter's unappropriate mathematics presented • the opponent appreciated and highlighted the st | nderstanding of the presented concepts, theories pponent critiqued the experimental technique use | and <i>principles</i> • the opponent understood the data • the |
| 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 ser | 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 shortco | |
| Rep.: Mad 5 | Opp.: Stree a 5 | Rev.: Netheles 5 |
| Physics ±3 | Physics ±3 -2 | Physics ±3 -2 |
| ☐ Correct and relevant physics | ☐ Correct and relevant physics | ☐ Correct and relevant physics |
| Scientific approach | ☐ Scientific approach | ☐ Scientific approach |
| ☐ Validity of conclusions | ☐ Validity of conclusions | ☐ Validity of conclusions |
| ☐ Accurate answers | ☐ Accurate answers | ☐ Accurate answers |
| Presentation ±1 | Presentation ±1 | Presentation ±1 |
| Clear and understandable | Clear and understandable | Clear and understandable |
| ☐ Appropriate manner | ☐ Appropriate manner | Appropriate manner |
| Overall impression | U Overall impression | Overall impression |
| Reporter ±1 | Opponent ±1 | Reviewer ±1 |
| ☐ Quality of experimental technique(s) | Response to the reporter's solution | Provides a thorough review of report and discussion |
| ☐ Structure | ☐ Shows the strong and weak points | ☐ Expresses own opinion about |
| Explanation of formulae and symbols | of the report Finds shortcomings or errors in | topics presented or discussed Relevance of questions to both the |
| Appropriate models, conformity of dimensions | the report | reporter and the opponent |
| Slides, on-site experiments, audio, video, as appropriate | ☐ Relevance of the questions ☐ Contribution to the discussion | Draws attention to points missed by the reporter or the opponent |
| References, proper citations of ideas and input of others | | This sheet will be collected by the fight assistant, so we can scan it and |
| ☐ Novelty of the report | | fight assistant, so we can be a please archive your partial grades — please |

Final Grade: Reporter

☐ Contribution to the discussion

Final Grade: Opponent

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

do not bend



Scoring Guidelines

| Fight (Round no.): Room: | Stage: Problem no.: | 3 |
|--------------------------|-------------------------|---|
| Juror: Angela Fosel | Signature: Augula Tosel | |

| Α | rep | ort | shou | ıld | incl | ude: |
|---|-----|-----|------|-----|------|------|
|---|-----|-----|------|-----|------|------|

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

An opposition should show that:

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

A review should show that:

Final Grade: Reporter

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

| Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find. | | | | | | | | |
|---|--|---|--|--|--|--|--|--|
| Rep.:5 | Opp.: 5 | Rev.: 5 | | | | | | |
| Physics ±3 | Physics ±3 | Physics ±3 | | | | | | |
| ☐ Correct and relevant physics | ☐ Correct and relevant physics | ☐ Correct and relevant physics | | | | | | |
| Scientific approach | ☐ Scientific approach | ☐ Scientific approach | | | | | | |
| ☐ Validity of conclusions | ☐ Validity of conclusions | ☐ Validity of conclusions | | | | | | |
| ☐ Accurate answers | ☐ Accurate answers | ☐ Accurate answers | | | | | | |
| Presentation ±1 | Presentation ±1 | Presentation ±1 | | | | | | |
| Clear and understandable | ☐ Clear and understandable | ☐ Clear and understandable | | | | | | |
| Appropriate manner | ☐ Appropriate manner | ☐ Appropriate manner | | | | | | |
| Overall impression | Overall impression | ☐ Overall impression | | | | | | |
| Reporter ±1 | Opponent ±1 | Reviewer ±1 | | | | | | |
| Quality of experimental technique(s) | Response to the reporter's solution | Provides a thorough review of report and discussion | | | | | | |
| ☐ Structure | ☐ Shows the strong and weak points | Expresses own opinion about | | | | | | |
| ☐ Explanation of formulae and | of the report | topics presented or discussed | | | | | | |
| symbols | 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 | | | | | | |
| | | and the Call Service | | | | | | |
| ☐ Novelty of the report | | and the Call Service | | | | | | |
| | | fight assistant, so we can scan it and archive your partial grades – please do not bend | | | | | | |

Final Grade: Opponent

| | | Fight (Round no.): Room: |
|---------|------------|-----------------------------|
| Scoring | Guidelines | Juror: Xvdieas Vaterlaus si |

| A report should includ | ould inclu | ıde: |
|------------------------|------------|------|
|------------------------|------------|------|

• 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 sh

| bon c painstringsing answers when it | o questions were posed or not initially shorter | offlings if there were none to find. |
|--|--|---|
| Rep.: 5 | Opp.: 5 | Rev.: 5 |
| Physics ±3 | Physics ±3 | Physics ±3 |
| Correct and relevant physics Scientific approach Validity of conclusions Accurate answers Presentation ±1 | Correct and relevant physics Scientific approach Validity of conclusions Accurate answers Presentation ±1 | Correct and relevant physics Scientific approach Validity of conclusions Accurate answers 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 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 | 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 Draws attention to points missed by the reporter or the opponent This sheet will be collected by the tight assistant, so we can scan it and fight assistant, so we can scan it and fight assistant, so we can scan it and fight assistant archive your partial grades — please archive your partial grades — please do not bend |
| | | fileness to b |

Final Grade: Opponent

| Scoring | G | uid | eli | in | es |
|---------|---|-----|-----|----|----|
|---------|---|-----|-----|----|----|

| | | Fight (Round no.): | 3 Roor | m: H Stage: Problem no.: |
|---|--|---|--|--|
| Scoring Guideli | | | | Signature: Jones |
| application of appropriate mathematics • r | easonable ex experimental | erimental technique findings to draw su | to <i>gather</i> and | explanation of the observed phenomena • an record data (or demonstrate the phenomena if ons • an attempt to communicate difficult or |
| An opposition should show that: • the opponent challenged the reporter's u | nderstanding | of the presented cor | al technique use | and <i>principles</i> • the opponent understood the ed and questioned the <i>validity</i> of the <i>data</i> • the |
| important aspects (especially the controver | <i>sial</i> ones) ● th on-trivial and | e reviewer's <i>persond</i> demonstrated, where | Il opinion was in e possible, the re | and opponent • the reviewer appreciated the n evidence (not just superficial observations) • reviewer's understanding of concepts, theories, |
| The grade for each of the three teams The reporter, opponent and reviewer Consider the following suggestions to Select each partial grade from each se Don't punish missing 'answers' when residual | each <i>start w</i> <i>add</i> to or <i>de</i> ction and <i>wr</i> | ith 5 points . duct from the initia ite it in the corresp | al 5 points . onding box. | |
| Rep.: Stoland Kothe Williet 5 | | Slovenia Ziga Bosor | _ 5 | Rev.: Netherland 5 |
| Physics ±3 | Physics | s ±3 | | Physics ±3 |
| □ Correct and relevant physics ☑ Scientific approach – □ Validity of conclusions □ Accurate answers | ☐ Scier☐ Valid | ect and relevant partific approach of ity of conclusions of answers | | ☐ Correct and relevant physics☐ Scientific approach☐ Validity of conclusions☐ Accurate answers |
| Presentation ±1 | Presen | tation ±1 | 0.5 | Presentation ±1 |
| ☐ Clear and understandable ☐ Appropriate manner + 0.5 ☐ Overall impression | ☐ Appr | and understanda opriate manner all impression | able | ☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression |
| Reporter ±1 | Oppone | · | 6. 5 | Reviewer ±1 |
| Quality of experimental + 67 0.5 technique(s) | | onse to the repor | | Provides a thorough review of |
| ⊠ Structure | ☐ Show | s the strong and | weak points | report and discussion Expresses own opinion about |
| Explanation of formulae and symbols | Finds | report shortcomings or | errors in | topics presented or discussed Relevance of questions to both th |
| Appropriate models, conformity of dimensions | the re | port ance of the quest | | reporter and the opponent |
| Slides, on-site experiments, audio, video, as appropriate | | bution to the dis | | Draws attention to points missed by the reporter or the opponent |
| References, proper citations of ideas and input of others | | | | This sheet will be collected by the |
| Novelty of the report | | | , . | fight assistant, so we can scale a archive your partial grades – please |
| Contribution to the discussion | | | | do not bend |

Final Grade: Reporter

Final Grade: Opponent



| Scoring | Guidelines | 1 |
|---------|------------|---|
|---------|------------|---|

| Fight (Round no.): | <u> </u> | <u>H</u> 9 | Stage: | _ Problem no.: | <u>(5</u> |
|----------------------|----------|------------|--------|----------------|-----------|
| Juror: <u>Xuewei</u> | Cas | Signature | X | Cas | |

• 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 apparent and reviewer each start with Empires

| 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.: Poland 5 | Opp.: Siloudnia 5 | Rev.: Noderland 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 o | Presentation ±1 | | | | |
| ☐ Clear and understandable | Clear and understandable | ☐ Clear and understandable | | | | |
| Appropriate manner | Appropriate manner | ☐ Appropriate manner | | | | |
| Overall impression | Overall impression | ☐ Overall impression | | | | |
| Reporter ±1 | Opponent ±1 | Reviewer ±1 | | | | |
| Quality of experimental technique(s) | Response to the reporter's solution | Provides a thorough review of report and discussion | | | | |
| ☐ Structure | ☐ Shows the strong and weak points | ☐ Expresses own opinion about | | | | |
| ☐ Explanation of formulae and | of the report | topics presented or discussed | | | | |
| symbols Appropriate models, conformity | ☐ Finds shortcomings or errors in the report | Relevance of questions to both the reporter and the opponent | | | | |
| Appropriate models, conformity of dimensions | ☐ Relevance of the questions | ☐ Draws attention to points missed | | | | |
| Slides, on-site experiments, audio, video, as appropriate | ☐ Contribution to the discussion | by the reporter or the opponent | | | | |
| References, proper citations of ideas and input of others | | This sheet will be collected by the fight assistant, so we can scan it and | | | | |
| ☐ Novelty of the report | | fight assistant, so we consider assistant, so we consider a please archive your partial grades – please | | | | |
| Contribution to the discussion | | do not bend | | | | |
| 4 | 2 | The state of the s | | | | |

Final Grade: Reporter

Final Grade: Opponent

| Scoring Guideli | Fight (Round no.) |): <u>3</u> Roon | n: <u>G</u> Stage: <u>1</u> | Problem no.: 13 | |
|--|---|---|--|---|--|
| Scoring Guiden | Juror: Vicing - | Ywan Hsi | C. Signature: Yeung | - Yvan A | |
| A report should include: • a presentation of the appropriate concept application of appropriate mathematics • I appropriate) • linking of theoretical and complex ideas in an effective and understant | easonable experimental techniq Ex perimental findings to draw s | ue to <i>gather</i> and i | re <mark>cord data</mark> (or demonstrate | the nhenomena if | |
| An opposition should show that: • the opponent challenged the reporter's u appropriate mathematics presented • the co opponent appreciated and highlighted the st | nderstanding of the presented co | ntal techniaue use | and <i>principles</i> • the opponed the <i>validit</i> | ent understood the by of the <i>data</i> • the | |
| A review should show that: • the reviewer succeeded in giving an obje important aspects (especially the controver such personal opinions were informative, ne principles and appropriate mathematics use | sial ones) • the reviewer's <i>perso</i> on-trivial and demonstrated, whe | <i>nal opinion</i> was in ere possible, the re | evidence (not just superfici | ial observations) a | |
| The grade for each of the three teams The <i>reporter</i> , <i>opponent</i> and <i>reviewer</i> Consider the following <i>suggestions</i> to Select each partial grade from each se Don't punish missing 'answers' when re | each start with 5 points. add to or deduct from the init ction and write it in the corres | tial <i>5 points</i> . sponding box. | | | |
| Rep.: Kocper Wikei 5 | Opp.: Slovenia | 5 | Rev.: Netherlan | <u>d</u> 5 | |
| Physics ±3 | Physics ±3 | | Physics ±3 | 40 | |
| ☐ Correct and relevant physics ☐ Scientific approach ☐ Validity of conclusions | ☐ Correct and relevant☐ Scientific approach☐ Validity of conclusion☐ | | ☐ Correct and relevant physics ☐ Scientific approach ☐ Validity of conclusions | | |
| Accurate answers Presentation ±1 | ☐ Accurate answers Presentation ±1 | +0 | ☐ Accurate answers Presentation ±1 | ; [40] | |
| Clear and understandable Appropriate manner Overall impression | ☐ Clear and understand☐ Appropriate manner☐ Overall impression | | ☐ Clear and underst☐ Appropriate man | tandable ner | |
| eporter ±1 + O. | Opponent ±1 | 40 | Reviewer ±1 | -13 | |

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 $\ \square$ Shows the strong and weak points øf the report Finds shortcomings or errors in the report Relevance of the questions ☐ Contribution to the discussion

Final Grade: Opponent

☐ 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 sean it and archive your partial grades - please

do not bend



• 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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| 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.: Netherkerty 5 | Rev.: Polad. 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 +1/2 | 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 $\pm 1/2$ | Opponent ±1 | Reviewer ±1 1/2 | | | |
| Quality of experimental technique(s) | Response to the reporter's solution | Provides a thorough review of report and discussion | | | |
| ☐ Structure | ☐ Shows the strong and weak points | Expresses own opinion about | | | |
| ☐ Explanation of formulae and | of the report | topics presented or discussed | | | |
| symbols | Finds shortcomings or errors in | Relevance of questions to both the | | | |
| Appropriate models, conformity of dimensions | the report | reporter and the opponent | | | |
| | Relevance of the questions | Draws attention to points missed | | | |
| Slides, on-site experiments, audio, video, as appropriate | ☐ Contribution to the discussion | by the reporter or the opponent | | | |
| References, proper citations of ideas and input of others | | This sheet will be collected by the fight assistant, so we can scan it and | | | |
| ☐ Novelty of the report | | archive your partial Brades | | | |
| Contribution to the discussion | | do not bend | | | |

Final Grade: Reporter

Final Grade: Opponent

Final Grade: Reviewer

Scoring Guidelines

| Fight (Round no.): 3 Room: 4 Stage: 2 Problem no.: | 8 |
|--|----|
| Juror: Angela Fosel signature: Augela Fosel | 2 |
| and principles of the problem • an explanation of the observed phenomena • a experimental technique to gather and record data (or demonstrate the phenomena of findings to draw suitable conclusions • an attempt to communicate difficult of er | if |

A report should include:

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

An opposition should show that:

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

A review should show that:

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
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- Select each partial grade from each section and write it in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

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

Final Grade: Opponent

| A SECOND | | | | 8 | , | | | | STATE OF | | | Ø | | f | Ñ | 8 | | | | |
|----------|--|---|-------|---|----|---|-------------|-----|------------------------|-----|-----|---|--|--------|-----|-----|------|----|----------|------|
| - | A CONTRACTOR OF THE PARTY OF TH | | B 100 | 量 | B. | 4 | | - A | AND THE REAL PROPERTY. | 顧 | 8 | £ | | 1 | 層 | Ø | Bet. | - | 1 | No. |
| | L (| J | Ø. | M | ø | Ħ | 9 | ₩. | 7 | L | 9 | ğ | | | ı | Ø | ı | H | | - |
| | | | | ~ | | - | Secretary . | - | STATE OF | 400 | 8 5 | 0 | - Carrier Carr | 400000 | EST | 100 | 8 | 88 | April 10 | 800F |

Rep.:

Physics ±3

☐ Correct and relevant physics

☐ Scientific approach ☐ Validity of conclusions ☐ Accurate answers

Presentation ±1

Appropriate manner Overall impression

Reporter ±1

Clear and understandable

Explanation of formulae and

Appropriate models, conformity

Slides, on-site experiments, audio,

| Scoring Guidelin | | Room: Stage: Problem no.: Stage: Stage: |
|---|--|---|
| | es Juror: Andieces Verteile | MS Signature: X. VIIIIIIII |
| application of appropriate mathematics • reas | sonable experimental technique to gathe . P erimental findings to draw suitable cor | • an explanation of the observed phenomena • an r and record data (or demonstrate the phenomena if oclusions • an attempt to communicate difficult or |
| An opposition should show that: • the opponent <i>challenged</i> the <i>reporter's unde appropriate mathematics</i> presented • the opponent appreciated and highlighted the <i>stren</i> | onent critiqued the experimental technique | ories and principles • the opponent understood the used and questioned the validity of the data • the |
| important aspects (especially the controversial | I ones) • the reviewer's personal opinion 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 grade for each of the three teams co The <i>reporter</i> , <i>opponent</i> and <i>reviewer</i> each Consider the following <i>suggestions</i> to <i>ad</i> Select each partial grade from each section Don't punish missing 'answers' when no o | ch start with 5 points. Id to or deduct from the initial 5 points on and write it in the corresponding be | 5. OX. |
| Rep.:5 | Opp.:5 | Rev.:5 |
| Correct and relevant physics Scientific approach | Physics ±3 Correct and relevant physics Scientific approach Validity of conclusions Accurate answers | Physics ±3 Correct and relevant physics Scientific approach Validity of conclusions Accurate answers |
| Clear and understandable Appropriate manner | Presentation ±1 Clear and understandable Appropriate manner Overall impression | Presentation ±1 Clear and understandable Appropriate manner Overall impression |
| *** | Opponent ±1 | Reviewer ±1 |
| technique(s) | Response to the reporter's solution | Provides a thorough review of report and discussion |
| Explanation of formulae and | Shows the strong and weak point of the report | topics presented or discussed |
| Appropriate models, conformity | Finds shortcomings or errors in the report Relevance of the questions | reporter and the opponent |
| | 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 | | This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades — please |

Final Grade: Reporter

Contribution to the discussion

Final Grade: Opponent

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

do not bend



| | Fight (Round no.): 3 Room | : H Stage: 2 Problem no.: 8 |
|--------------------------|---------------------------|-----------------------------|
| Scoring Guidelines | Juror: Joury Trey | Signature: |
| 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

| principles and appropriate mathematics use | d by the reporter and the opponent | | | | |
|---|--|--|--|--|--|
| The reporter, opponent and reviewer Consider the following suggestions to Select each partial grade from each sec | consists of a partial grade for <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 shortcomes. | | | | |
| Rep.: Storage 5 | Opp.: Netherland. 5 | Rev.: Poland 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 +05 | 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 | | | |
| | | The state of the s | | | |
| 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 | Expresses own opinion about | | | |
| Explanation of formulae and | of the report | Expresses own opinion about topics presented or discussed | | | |
| symbols Appropriate models, conformity of dimensions | ☐ Finds shortcomings or errors in the report | Relevance of questions to both the reporter and the opponent | | | |
| 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 re- archive your partial grades – please | | | |
| Contribution to the discussion | | do not bend | | | |
| | 2 | P | | | |
| Final Grade: Reporter | Final Grade: Opponent | Final Grade: Reviewer | | | |

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

| | | Fight (Round no.): | : <u> </u> | Room: | <u> </u> | Stage |
|---------|------------|--------------------|------------|-------|----------|-------|
| Scoring | Guidelines | luror: X | / | 2 | Signatur | \ |

Stage: Problem no.:

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 The reporter, opponent and reviewer of the consider the following suggestions to select each partial grade from each seed to Don't punish missing 'answers' when not seed to be suggested to be suggested. | | | | | |
|--|--|--|--|--|--|
| Physics ±3 Correct and relevant physics | Physics ±3 | Physics ±3 | | | |
| 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 | 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 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 are fight assistant, so we are archive your partial grades – please | | | |
| ☐ Contribution to the discussion | alamana a manda han basananan manan . | do not bend | | | |
| general content and content an | promote the second seco | | | | |

Final Grade: Opponent

Final Grade: Reviewer

| | Field (David Land) | m: Stage: Problem no.: |
|--|--|--|
| Scoring Guideli | | 1. Signature: Yeng Yuan Ho |
| application of appropriate mathematics • r | ots, theories and principles of the problem • an eleasonable experimental technique to gather and experimental findings to draw suitable conclusion adable manner | record data (or demonstrate the phenomena if |
| An opposition should show that: • the opponent challenged the reporter's unappropriate mathematics presented • the opponent appreciated and highlighted the 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 |
| 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 se | consists of a partial grade for <i>physics</i> , <i>present</i> each <i>start with 5 points</i> . <i>add</i> to or <i>deduct</i> from the initial <i>5 points</i> . ction and <i>write it</i> in the corresponding box. no questions were posed or not finding shorton | |
| Rep.: Makskdmas 5 | Opp.: Glon Muldee 5 | Rev.: Yakub 5 |
| Physics ±3 | Physics ±3 | Physics ±3 |
| ☐ Correct and relevant physics | ☐ Correct and relevant physics | ☐ Correct and relevant physics |
| ☐ Scientific approach — Simple | ☐ 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☐ Overall impression | ☐ Appropriate manner | Appropriate manner |
| - Overall impression | U Overall impression | Overall impression |
| Reporter ±1 Quality of experimental | Opponent ±1 | Reviewer ±1 |
| / \technique(s) | Response to the reporter's solution | Provides a thorough review of report and discussion |
| ☐ Structure | Shows the strong and weak points of the report | Expresses own opinion about topics presented or discussed |
| Explanation of formulae and symbols | ☐ Finds shortcomings or errors in | Relevance of questions to both the |
| Appropriate models, conformity of dimensions | the report Relevance of the questions | reporter and the opponent Draws attention to points missed |
| Slides, on-site experiments, audio, video, as appropriate | ☐ Contribution to the discussion | by the reporter or the opponent |

 \square Contribution to the discussion Final Grade: Reporter Final Grade: Opponent

References, proper citations of ideas and input of others

☐ Novelty of the report

Final Grade: Reviewer

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

do not bend

This sheet will be collected by the

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

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Rep.: Netteles

☐ Scientific approach

☐ Accurate answers

Presentation ±1

☐ Validity of conclusions

☐ Clear and understandable

☐ Appropriate manner

☐ Quality of experimental technique(s)

☐ Appropriate models, conformity

☐ Slides, on-site experiments, audio,

References, proper citations of

☐ Overall impression

Reporter ±1

□ Structure

☐ Novelty of the report

ideas and input of others

☐ Correct and relevant physics

Physics ±3

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|---|--|---|--|--|--|--|--|
| Scoring Guidelii | | n: Stage: Problem no.: | | | | | |
| scoring duideni | Juror: T-BALCOMBE | Signature: A BVC | | | | | |
| application of appropriate mathematics • r | ets, theories and principles of the problem • and easonable experimental technique to gather and experimental findings to draw suitable conclusions dable manner | record data (or demonstrate the nhenomena 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 d 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 on-trivial and demonstrated, where possible, the red by the reporter and the opponent | evidence (not just superficial observations) | | | | | |
| The <i>reporter, opponent</i> and <i>reviewer</i> Consider the following <i>suggestions</i> to Select each partial grade from each sea | 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 shorter | | | | | | |
| Sep.: Netheles 5 | Opp.: Relad 5 | Rev.: Stevenia 5 | | | | | |
| hysics ±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 | | | | | |
| resentation ±1 | Presentation ±1 | Presentation ±1 / | | | | | |
| Clear and understandable | ☐ Clear and understandable | ☐ Clear and understandable | | | | | |
| Appropriate manner | Appropriate manner | ☐ Appropriate manner | | | | | |
| Overall impression | U Overall impression | Overall impression | | | | | |
| eporter ±1 | Opponent ±1 | Reviewer ±1 | | | | | |
| Quality of experimental technique(s) | Response to the reporter's solution | Provides a thorough review of report and discussion | | | | | |
| Structure | ☐ Shows the strong and weak points | Expresses own opinion about | | | | | |
| Explanation of formulae and symbols | of the report Finds shortcomings or errors in | topics presented or discussed Relevance of questions to both the | | | | | |
| Appropriate models, conformity of dimensions | the report Relevance of the questions | reporter and the opponent Draws attention to points missed | | | | | |
| Slides, on-site experiments, audio, video, as appropriate | ☐ Contribution to the discussion | by the reporter or the opponent | | | | | |

☐ Contribution to the discussion Final Grade: Reporter

Final Grade: Opponent

Final Grade: Reviewer

do not bend

This sheet will be collected by the

fight assistant, so we can scan it and

archive your partial grades - please



Scoring Guidelines

Fight (Round no.): 3 Room: H Stage: 3 Problem no.: 1

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

A report should include:

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

An opposition should show that:

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

A review should show that:

Final Grade: Reporter

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

- The grade for each of the three teams consists of a partial grade for physics, presentation and for their specific role.
- The reporter, opponent and reviewer each start with 5 points.
- Consider the following *suggestions* to *add* to or *deduct* from the initial *5 points*.
- Select each partial grade from each section and write it in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

| Rep.: 5 | Opp.:5 | Rev.: |
|---|--|--|
| | | |
| Physics ±3 | Physics ±3 +2 | Physics ±3 |
| ☐ Correct and relevant physics | ☐ Correct and relevant physics | ☐ Correct and relevant physics |
| ☐ Scientific approach | ☐ Scientific approach | ☐ Scientific approach |
| ☐ Validity of conclusions | ☐ Validity of conclusions | ☐ Validity of conclusions |
| ☐ Accurate answers | ☐ Accurate answers | ☐ Accurate answers |
| Presentation ±1 | Presentation ±1 | Presentation ±1 |
| ☐ Clear and understandable | ☐ Clear and understandable | ☐ Clear and understandable |
| ☐ Appropriate manner | ☐ Appropriate manner | ☐ Appropriate manner |
| Overall impression | ☐ Overall impression | Overall impression |
| Reporter ±1 | Opponent ±1 | Reviewer ±1 +1 |
| Quality of experimental technique(s) | Response to the reporter's solution | Provides a thorough review of report and discussion |
| ☐ Structure | ☐ Shows the strong and weak points | ☐ Expresses own opinion about |
| ☐ Explanation of formulae and | of the report | topics presented or discussed |
| symbols | Finds shortcomings or errors in | ☐ Relevance of questions to both the |
| Appropriate models, conformity of dimensions | the report Relevance of the questions | reporter and the opponent 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 |
| | | fight assistant, so we con- archive your partial grades – please |
| ☐ Novelty of the report | | archive your partial o |
| ☐ Contribution to the discussion | | do not bend |

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| Scoring Guidelines | Fight (Round no.): 3 Room: 3 Stage: Problem no.: 11 Juror: X. ValeRaus Signature: X. Ullians |
|--|--|
| A report should include: | |
| 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 ner |
| An opposition should show that: | |
| the opponent challenged the reporter's understandin appropriate mathematics presented • the opponent crist opponent appreciated and highlighted the strengths and | of the presented concepts, theories and principles • the opponent understood the tiqued the experimental technique used and questioned the validity of the data • the dweaknesses of the report |

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

complex ideas in an effective and understandable manne An opposition should show that:

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

| Carrier III | | | | 8 | 4 | | | - | 000 | | | 8 | 额 | | Æ | 4 | 3 | | | | |
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| Fight (Round no.): 3 Room: H Stage: 3 Problem no.: | Ç.vona |
|--|--------|
| Juror: Jour Tan Signature: Jour | |
| and principles of the problem • an explanation of the observed phenomena • a experimental technique to gather and record data (or demonstrate the phenomena of findings to draw suitable conclusions • an attempt to communicate difficult of the conclusions • and attempt to communicate difficult of the conclusions • an attempt to communicate difficult of the conclusions • an attempt to communicate difficult of the conclusions • an attempt to communic | if |

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 application of appropriate mathematics • reasonable es appropriate) • linking of theoretical and experimenta complex ideas in an effective and understandable mann

An opposition should show that:

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

A review should show that:

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*.

| Select each partial grade from each sec | each start with 5 points. add to or deduct from the initial 5 points. tion and write it in the corresponding box. o questions were posed or not finding shortco | omings if there were none to find. | | | | | | |
|---|--|--|--|--|--|--|--|--|
| Rep.: Mellerland Peler Redele. 5 | Opp.: Poland Kul Conops. 5 | Rev.: Korelia Wars le gles 5 | | | | | | |
| Physics ±3 | Physics ±3 | Physics ±3 | | | | | | |
| ☐ Correct and relevant physics | ☐ Correct and relevant physics | ☐ Correct and relevant physics | | | | | | |
| Scientific approach | ☐ Scientific approach | ☐ Scientific approach | | | | | | |
| ☐ Validity of conclusions | ☐ Validity of conclusions | ☐ Validity of conclusions | | | | | | |
| ☐ Accurate answers | ☐ Accurate answers | ☐ Accurate answers | | | | | | |
| Presentation ±1 | Presentation ±1 | Presentation ±1 | | | | | | |
| Clear and understandable | Clear and understandable | ☐ Clear and understandable | | | | | | |
| Appropriate manner | Appropriate manner | Appropriate manner | | | | | | |
| Overall impression | Overall impression | Overall impression | | | | | | |
| Reporter ±1 0-5 | Opponent ±1 | Reviewer ±1 | | | | | | |
| 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 by the reporter or the opponent | | | | | | |
| Slides, on-site experiments, audio, video, as appropriate | ☐ Contribution to the discussion | | | | | | | |
| References, proper citations of ideas and input of others | | This sheet will be collected by the fight assistant, so we can scan it and | | | | | | |
| ☐ Novelty of the report | | fight assistant, so we can archive your partial grades – please | | | | | | |
| Contribution to the discussion | | do not bend | | | | | | |
| | | | | | | | | |

Final Grade: Opponent

| A 5000 | | | | 4 | ŧ | | | | | | | 0 | 45 | ř | 8 | 68 | , | | | |
|----------|------|---|---|---|----|---|---------|---|---------|------|---|----|----------|---------|---|-----|-------|-----|--|------|
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| Fight (Round no.): Room | : Stage: | Problem no.: |
|-------------------------|------------|--------------|
| Juror: Xuewei Cao | Signature: | Cas |

• 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

| • the opponent challenged the reporter's unappropriate mathematics presented • the opponent appreciated and highlighted the st | nderstanding of the presented concepts, theories exponent critiqued the experimental technique use | and <i>principles</i> • the opponent understood the ed and questioned the <i>validity</i> of the <i>data</i> • the | | |
|---|--|--|--|--|
| important aspects (especially the controver | ctive summary of the performances the reporter sial ones) • the reviewer's personal opinion was in the reviewer's personal opinion was in the reviewer 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 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 shorto | omings if there were none to find. | | |
| Rep.: Nether land 5 | Opp.: foland 5 | Rev.: Slovenia 5 | | |
| Physics ±3 | Physics ±3 | Physics ±3 | | |
| Correct and relevant physics | ☐ Correct and relevant physics | Correct and relevant physics | | |
| ☐ Scientific approach | ☐ Scientific approach | ☐ Scientific approach | | |
| ☐ Validity of conclusions | ☐ Validity of conclusions | ☐ Validity of conclusions | | |
| Accurate answers | ☐ Accurate answers | ☐ Accurate answers | | |
| Presentation ±1 | Presentation ±1 | Presentation ±1 | | |
| ☐ Clear and understandable | Clear and understandable | Clear and understandable | | |
| Appropriate manner | ☐ Appropriate manner | Appropriate manner | | |
| Overall impression | Overall impression | Overall impression | | |
| Reporter ±1 | Opponent ±1 | Reviewer ±1 | | |
| ☐ Quality of experimental technique(s) | Response to the reporter's solution | Provides a thorough review of report and discussion | | |
| ☐ Structure | Shows the strong and weak points | Expresses own opinion about | | |
| Explanation of formulae and symbols | of the report | topics presented or discussed | | |
| e section and the section and | 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 do archive your partial grades — please | | |
| Contribution to the discussion | | do not bend | | |
| | | | | |

Final Grade: Reporter

Final Grade: Opponent





| | | Fight (Round no.): _ | <u> </u> | / Stage: | Prob |
|-----------|------------|----------------------|-----------|--------------------|--------|
| Scoring G | Guidelines | Juror: Ywng - Yo | han Hsusi | ignature: <u>7</u> | lung J |

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.

| Select each partial grade from each sec | tion 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.: Netherland. 5 | Opp.: Stevense 5 | Rev.: Polan Slovenia. | | | | |
| Physics ±3 | Physics ±3 | .Physics ±3 | | | | |
| Correct and relevant physics | ☐ Correct and relevant physics | Correct and relevant physics | | | | |
| ☐ Scientific approach | ☐ Scientific approach | ☐ Scientific approach | | | | |
| ☐ Validity of conclusions | ☐ Validity of conclusions | ☐ Validity of conclusions | | | | |
| ☐ Accurate answers | ☐ Accurate answers | ☐ Accurate answers | | | | |
| Presentation ±1 | Presentation ±1 | Presentation ±1 | | | | |
| ☐ Clear and understandable / | ☐ Clear and understandable | ☐ Clear and understandable | | | | |
| ☐ Appropriate manner | Appropriate manner | ☐ Appropriate manner | | | | |
| Overall impression | ☐ Overall impression | ☐ Overall impression | | | | |
| Reporter ±1 | Opponent ±1 | Reviewer ±1 | | | | |
| Quality of experimental technique(s) | Response to the reporter's solution | Provides a thorough review of report and discussion | | | | |
| Structure | ☐ Shows the strong and weak points | Expresses own opinion about | | | | |
| Explanation of formulae and | of the report | topics presented or discussed | | | | |
| symbols Appropriate models, conformity | Finds shortcomings or errors in the report | Relevance of questions to both the reporter and the opponent | | | | |
| of dimensions | 🗹 Relevance of the questions | Draws attention to points missed by the reporter or the opponent | | | | |
| ☐ Slides, on-site experiments, audio, video, as appropriate | Contribution to the discussion | | | | | |
| References, proper citations of ideas and input of others | | This sheet will be collected by the fight assistant, so we can scan it and | | | | |
| ☐ Novelty of the report | | fight assistant, so we are fight assistant, so we are archive your partial grades – please | | | | |
| Contribution to the discussion | | do not bend | | | | |
| | r / Ab n | | | | | |

Final Grade: Opponent