SCORESHEET

stage: **3** fight (round no.): **3** room: **K** problem no.: Juror's name: **SCHMIDT?**

reporter: **IRAN** opponent: **AUSTRALIA** reviewer: **NEW ZEALAND** signature: *[signed]*

REPORTER Start from 1 and add/subtract

1 + |1.6| + |1.5| - |0.7| = |4|

REPORT

	phenomenon explanation	theory/model	relevant experiments	comparison between theory and experiment	own contribution	task fulfilment
0	almost no	almost no	too few ✗	no/ almost no ✗	others' data, incorrectly cited	misunderstood
1	some ✗	some	some	some	review of sources, cited	partly ✗
2	fair	fair	fair	not well fitting	some own input	average ✗
3	good ✗	good ✗	well performed, sufficient number	deviations qualitatively analysed	some interesting results ✗	interesting solution
4						
5	detailed demonstrative	quite detailed, correct	+ results explained errors analysed	+ theory limits explained, conclusive	considerable experimental or theoretical	some aspects above average
6	deep and comprehensible, shows physical insight	detailed, complex, completely testable	+ reproducible, convincing analysis	well fitting, deviations analysed, conclusive	considerable experimental and theoretical	greater extent than expected

DISCUSSION WITH OPPONENT

	scientific contribution	relevant arguments/responses	efficiency
0	almost no	too few	almost no, chaotic
	only technical points cleared	some	avoided some questions
1	some scientific points cleared	many	cooperated well ✗
2			
3	interesting points discussed	+ data/theory convincingly supported	answered directly to most questions
4	brought in new physics	proved deep understanding	efficient, productive

ANSWERS TO JURY, OPPONENT and REVIEWER'S QUESTIONS

0	concise and correct or no questions asked
-1	some incorrect, inconclusive or too long
-2	deeply incorrect or show deep misconceptions

NOTES: *Only 2 angles, ~~two~~ no variations - Lack of systematic exp. and validation with theory*

OPPONENT Start from 1 and add/subtract

1 + |1| + |2.5| + |1.3| - |0| = |6| (5.5)

QUESTIONS ASKED

0	almost no, irrelevant
1	some relevant, aimed at resolving ✗ / some unclear points ✗
2	short allowing short answers, prioritized, all time used

OPPOSITION (SPEECH)

	time used	understanding of presentation	relevant topics addressed	correct own opinions expressed	prioritisation
0	almost no	almost nothing	no or irrelevant	almost no	no
1	very little	some main points	few	some	almost no
2	not all ✗	main points	some	to important topics ✗	some ✗
3	almost all	all relevant points ✗	many ✗	to most topics	reasonable
4	all & efficiently	practically all points ✗	practically all	+ improvement suggestions	very good

DISCUSSION WITH REPORTER

	scientific contribution	relevance of topics	own opinions presented	efficiency	prioritisation
0	almost no	irrelevant	very little	almost no	no
1	little ✗	some ✗	some	to some extent ✗	almost no ✗
2	partial	average	some correct	leading or cooperative	some
3	good	many	many correct	quite efficient	reasonable
4	new crucial point(s)	almost all	+ improvement suggestions	very efficient	very good

ANSWERS TO JURY and REVIEWER'S QUESTIONS

0	concise and correct or no questions asked ✗
-1	some incorrect, inconclusive or too long
-2	deeply incorrect or show deep misconceptions

NOTES: *① direction of F_D ② Variation of ω ③ viscosity values*
Disc: trys to observe Δm ω²r ① direction of drag force ② Focused too much on direction of forces and missed out exp. conditions and trends

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REVIEWER Start from 1 and add/subtract

1 + |1.5| + |2| + |2.5| - |0| = |7| (6.6)

QUESTIONS ASKED

0	too few, mostly irrelevant
1	some relevant, sufficient number, could clear things out ✗
2	most time used, many unclear points resolved, aimed at both rep. and opp.
3	+short, apt and clear, well prioritized time managed efficiently

REVIEW OF REPORT

	report summary & understanding	discussion analysis	own opinions	pros & cons	prioritisation
0	poor	almost no	too few	irrelevant	no
1	partial	too short/long	some	partially relevant	almost no
2	good ✗	relevant parts	many ✗	mostly adequate	some ✗
3	detailed, complex	accurate, conclusive	+ improvement suggestions	fully adequate	good

REVIEW OF OPPOSITION

	speech summary	discussion analysis	own opinions	pros & cons	prioritisation
0	poor	almost no	too few	irrelevant	no
1	too short/long	too short/long	some	partially relevant ✗	almost no
2	informative, apt ✗	relevant parts	many ✗	mostly adequate	some
3	brief but accurate	accurate, conclusive	+ improvement suggestions	fully adequate	good

ANSWERS TO JURY QUESTIONS

0	concise and correct or no questions asked ✗
-1	some incorrect, inconclusive or too long
-2	deeply incorrect or show deep misconceptions

NOTES: *He asked that more ?*

SCORESHEET

stage: 3   fight (round no.): 3   room: K   problem no.: 9   Juror's name: Hunkoot Jo

reporter: Iran   opponent: Australia   reviewer: New Zealand   signature: [signature]

REPORTER

Start from 1 and add/subtract

1 + [1.5] + [1] − [0.5] = [3]

REPORT

	phenomenon explanation	theory/model	relevant experiments	comparison between theory and experiment	own contribution	task fulfilment
0	almost no	almost no	too few	no/ almost no	others' data, incorrectly cited	misunderstood
1	some	some	some	some	review of sources, cited	early
2	fair	fair	fair	not well fitting	some own input	average
3	good	good	well performed, sufficient number	deviations qualitatively analysed	some interesting results	interesting solution
4	detailed demonstrative	quite detailed, correct	+ results explained errors analysed	+ theory limits explained, conclusive	considerable experimental or theoretical	some aspects above average
5						
6	deep and comprehensible, shows physical insight	detailed, complex, completely testable	+ reproducible, convincing analysis	well fitting, deviations analysed, conclusive	considerable experimental and theoretical	greater extent than expected

DISCUSSION WITH OPPONENT

	scientific contribution	relevant arguments/responses	efficiency
0	almost no	too few	almost no, chaotic
	only technical	some	avoided some questions
1	points cleared		cooperated well
2	some scientific points cleared	many	
	interesting points	+ data/theory	answered directly
3	discussed	convincingly supported	to most questions
4	brought in new physics	proved deep understanding	efficient, productive

ANSWERS TO JURY, OPPONENT and REVIEWER'S QUESTIONS

0	concise and correct or no questions asked
−1	some incorrect, inconclusive or too long
−2	deeply incorrect or show deep misconceptions

NOTES: Force Diagram: Unclear.   No #fitting   Too much complex.   Inappriate understanding about forces.   ⊤

OPPONENT

Start from 1 and add/subtract

1 + [1] + [2] + [2] − [0] = [6]

QUESTIONS ASKED

0	almost no, irrelevant
1	some relevant, aimed at resolving some unclear points
2	short allowing short answers, prioritized, all time used

OPPOSITION (SPEECH)

	time used	understanding of presentation	relevant topics addressed	correct own opinions expressed	prioritisation
0	almost no	almost nothing	no or irrelevant	almost no	no
1	very little	some main points	few	some	almost no
2	not all	main points	some	to important topics	some
3	almost all	all relevant points	many	to most topics	reasonable
4	all & efficiently	practically all points	practically all	+ improvement suggestions	very good

DISCUSSION WITH REPORTER

	scientific contribution	relevance of topics	own opinions presented	efficiency	prioritisation
0	almost no	irrelevant	very little	almost no	no
1	little	some	some	to some extent	almost no
2	partial	average	some correct	leading or cooperative	some
3	good	many	many correct	quite efficient	reasonable
4	new crucial point(s)	almost all	+ improvement suggestions	very efficient	very good

ANSWERS TO JURY and REVIEWER'S QUESTIONS

0	concise and correct or no questions asked
−1	some incorrect, inconclusive or too long
−2	deeply incorrect or show deep misconceptions

NOTES: Euler force?   What does that about that?   Buoyancy   IE

REVIEWER

Start from 1 and add/subtract

1 + [2] + [1.5] + [1.5] − [0] = [6]

QUESTIONS ASKED

0	too few, mostly irrelevant
1	some relevant, sufficient number, could clear things out
2	most time used, many unclear points resolved, aimed at both rep. and opp.
3	+short, apt and clear, well prioritized time managed efficiently

REVIEW OF REPORT

	report summary & understanding	discussion analysis	own opinions	pros & cons	prioritisation
0	poor	almost no	too few	irrelevant	no
1	partial	too short/long	some	partially relevant	almost no
2	good	relevant parts	many	mostly adequate	some
3	detailed, complex	accurate, conclusive	+ improvement suggestions	fully adequate	good

REVIEW OF OPPOSITION

	speech summary	discussion analysis	own opinions	pros & cons	prioritisation
0	poor	almost no	too few	irrelevant	no
1	too short/long	too short/long	some	partially relevant	almost no
2	informative, apt	relevant parts	many	mostly adequate	some
3	brief but accurate	accurate, conclusive	+ improvement suggestions	fully adequate	good

ANSWERS TO JURY QUESTIONS

0	concise and correct or no questions asked
−1	some incorrect, inconclusive or too long
−2	deeply incorrect or show deep misconceptions

NOTES: Coriolis force   Graph   Drag Force.
change of Ball → …?

SCORESHEET

stage: **3** fight (round no.): **3** room: **I** problem no.: **9.**

reporter: **Iran** opponent: **Australia.** reviewer: **New Zealand**

Juror's name: **Tzong-Yuan He** signature: **Tzong-Yuan He.**

Nika Emami. **Noah - Ash Pawh.** **Tanegan Messenil.**

REPORTER

Start from 1 and add/subtract

$1 + \boxed{1 \frac{1}{2}} + \boxed{1 \frac{1}{2}} - \boxed{0.} = \boxed{3}$

REPORT

	phenomenon explanation	theory/model	relevant experiments	comparison between theory and experiment	own contribution	task fulfilment
0	almost no ⓪	almost no	too few ⓪	no/ almost no ⓪	others' data, incorrectly cited	misunderstood
1	some Ⓞ	some Ⓧ	some	some	review of sources, cited	partly Ⓞ.
2	fair	fair Ⓞ	fair	not well fitting	some own input Ⓞ	average
3	good	good	well performed, sufficient number	deviations qualitatively analysed	some interesting results	interesting solution
4	detailed demonstrative	quite detailed, correct	+ results explained errors analysed	+ theory limits explained, conclusive	considerable experimental or theoretical	some aspects above average
5						
6	deep and comprehensible, shows physical insight	detailed, complex, completely testable	+ reproducible, convincing analysis	well fitting, deviations analysed, conclusive	considerable experimental and theoretical	greater extent than expected

DISCUSSION WITH OPPONENT

	scientific contribution	relevant arguments/responses	efficiency
0	almost no Ⓞ	too few Ⓞ	almost no, change avoided some Ⓞ
	only technical Ⓞ	some	questions
1	points cleared	many	cooperated well
2	some scientific points cleared		
3	interesting points discussed	+ data/theory convincingly supported	answered directly to most questions
4	brought in new physics	proved deep understanding	efficient, productive

ANSWERS TO JURY, OPPONENT and REVIEWER'S QUESTIONS

0	concise and correct or no questions asked
-1	some incorrect, inconclusive or too long
-2	deeply incorrect or show deep misconceptions

NOTES:

OPPONENT

Start from 1 and add/subtract

$1 + \boxed{1} + \boxed{1 \frac{3}{4}} + \boxed{1 \frac{1}{2}} - \boxed{0.} = \boxed{5.}$

QUESTIONS ASKED

0	almost no, irrelevant
1	some relevant, aimed at resolving some unclear points
2	short allowing short answers, prioritized, all time used

OPPOSITION (SPEECH)

	time used	understanding of presentation	relevant topics addressed	correct own opinions expressed	prioritisation
0	almost no	almost nothing	no or irrelevant	almost no	no
1	very little	some main points	few Ⓞ	some	almost no Ⓞ
2	not all Ⓞ	main points	some Ⓞ Ⓧ	to important topics Ⓞ	some Ⓞ
3	almost all Ⓞ	all relevant points Ⓞ	many Ⓧ	to most topics Ⓞ	reasonable
4	all & efficiently	practically all points	practically all	+ improvement suggestions	very good

DISCUSSION WITH REPORTER

	scientific contribution	relevance of topics	own opinions presented	efficiency	prioritisation
0	almost no Ⓞ	irrelevant	very little	almost no	no
1	little Ⓞ	some Ⓞ	some Ⓞ	to some extent Ⓞ	almost no
2	partial	average	some correct	leading or cooperative Ⓞ	some Ⓞ
3	good	many	many correct	quite efficient	reasonable
4	new crucial point(s)	almost all	+ improvement suggestions	very efficient	very good

ANSWERS TO JURY and REVIEWER'S QUESTIONS

0	concise and correct or no questions asked
-1	some incorrect, inconclusive or too long
-2	deeply incorrect or show deep misconceptions

NOTES: Sticked in the ideas limit, not able to provide real "own opinion".

REVIEWER

Start from 1 and add/subtract

$1 + \boxed{2 \frac{1}{2}} + \boxed{1 \frac{3}{4}} + \boxed{1 \frac{3}{4}} - \boxed{0} = \boxed{7.}$

QUESTIONS ASKED

0	too few, mostly irrelevant
1	some relevant, sufficient number, could clear things out
2	most time used, many unclear points resolved, aimed at both rep. and opp.
3	+ short, apt and clear, well prioritized time managed efficiently

REVIEW OF REPORT

	report summary & understanding	discussion analysis	own opinions	pros & cons	prioritisation
0	poor	almost no	too few	irrelevant	no
1	partial	too short/long	some Ⓞ	partially relevant	almost no Ⓞ
2	good Ⓞ	relevant parts Ⓞ	many Ⓥ	mostly adequate Ⓞ	some Ⓞ
3	detailed, complex	accurate, conclusive	+ improvement suggestions	fully adequate	good

REVIEW OF OPPOSITION

	speech summary	discussion analysis	own opinions	pros & cons	prioritisation
0	poor	almost no	too few	irrelevant	no
1	too short/long	too short/long	some Ⓞ	partially relevant	almost no Ⓞ
2	informative, apt	relevant parts Ⓞ	many Ⓥ	mostly adequate Ⓞ	some
3	brief but accurate	accurate, conclusive	+ improvement suggestions	fully adequate	good

ANSWERS TO JURY QUESTIONS

0	concise and correct or no questions asked
-1	some incorrect, inconclusive or too long
-2	deeply incorrect or show deep misconceptions

NOTES:

SCORESHEET

stage: **3** fight (round no.): **3** room: **K** problem no.: **9** Juror's name: **MCWATTERS**

reporter: **IRAN** opponent: **Australia** reviewer: **New Zealand** signature: *(signed)*

REPORTER
Start from 1 and add/subtract

1 + [2] + [1.5] − [2] = [2.5] (3)

REPORT							DISCUSSION WITH OPPONENT			ANSWERS TO JURY, OPPONENT and REVIEWER'S QUESTIONS
	phenomenon explanation	theory/model	relevant experiments	comparison between theory and experiment	own contribution	task fulfilment		scientific contribution	relevant arguments/responses	efficiency
0	almost no	almost no	~~too few~~	no/almost no	others' data, incorrectly cited	misunderstood	0	almost no	~~too few~~	almost no, chaotic
1	(some)	some	some	(some)	review of sources, cited	partly		only technical	(some)	avoided some
2	(fair)	(fair)	fair	not well fitting	some own input	average	1	(points cleared)	many	(questions)
3	good	good	well performed, sufficient number	deviations qualitatively analysed	(some interesting results)	(interesting solution)	2	(some scientific points cleared)		~~cooperated well~~
4	detailed demonstrative	quite detailed, correct	+ results explained errors analysed	+ theory limits explained, conclusive	considerable experimental or theoretical	some aspects above average	3	interesting points discussed	+ data/theory convincingly supported	answered directly to most questions
5										
6	deep and comprehensible, shows physical insight	detailed, complex, completely testable	+ reproducible, convincing analysis	well fitting, deviations analysed, conclusive	considerable experimental and theoretical	greater extent than expected	4	brought in new physics	proved deep understanding	efficient, productive

ANSWERS column:
0	concise and correct or no questions asked
−1	✗ some incorrect, inconclusive or too long
−2	✗ deeply incorrect or show deep misconceptions

NOTES: We can Ignore friction force → "Not much Contact?"   How does graph on 15 show time to Rise
Why does light Ball Move Slower → If Density INCREASES & will come up More Quickly
→ No Slides for viscosity Reduce time

OPPONENT
Start from 1 and add/subtract

1 + [1.5] + [3] + [3] − [0] = [7.5] (7)

QUESTIONS ASKED	OPPOSITION (SPEECH)					DISCUSSION WITH REPORTER					ANSWERS TO JURY and REVIEWER'S QUESTIONS
0 — almost no, irrelevant		time used	understanding of presentation	relevant topics addressed	correct own opinions expressed	prioritisation		scientific contribution	relevance of topics	own opinions presented	efficiency	prioritisation
1 ✗ some relevant, aimed at resolving some unclear points	0	almost no	almost nothing	no or irrelevant	almost no	no	0	almost no	irrelevant	very little	almost no	no
2 — short allowing short answers, (prioritized, all time used)	1	very little	some main points	few	some	almost no	1	little	some	some	to some extent	almost no
	2	not all	main points	(some)	to important topics	(some)	2	(partial)	average	~~some correct~~	leading or cooperative	(some)
	3	(almost all)	(all relevant points)	(many)	to most topics	(reasonable)	3	(good)	many	(many correct)	(quite efficient)	(reasonable)
		all &			(+ improvement suggestions)							
	4	efficiently	practically all points	practically all		very good	4	new crucial point(s)	almost all	+ improvement suggestions	very efficient	very good

ANSWERS column:
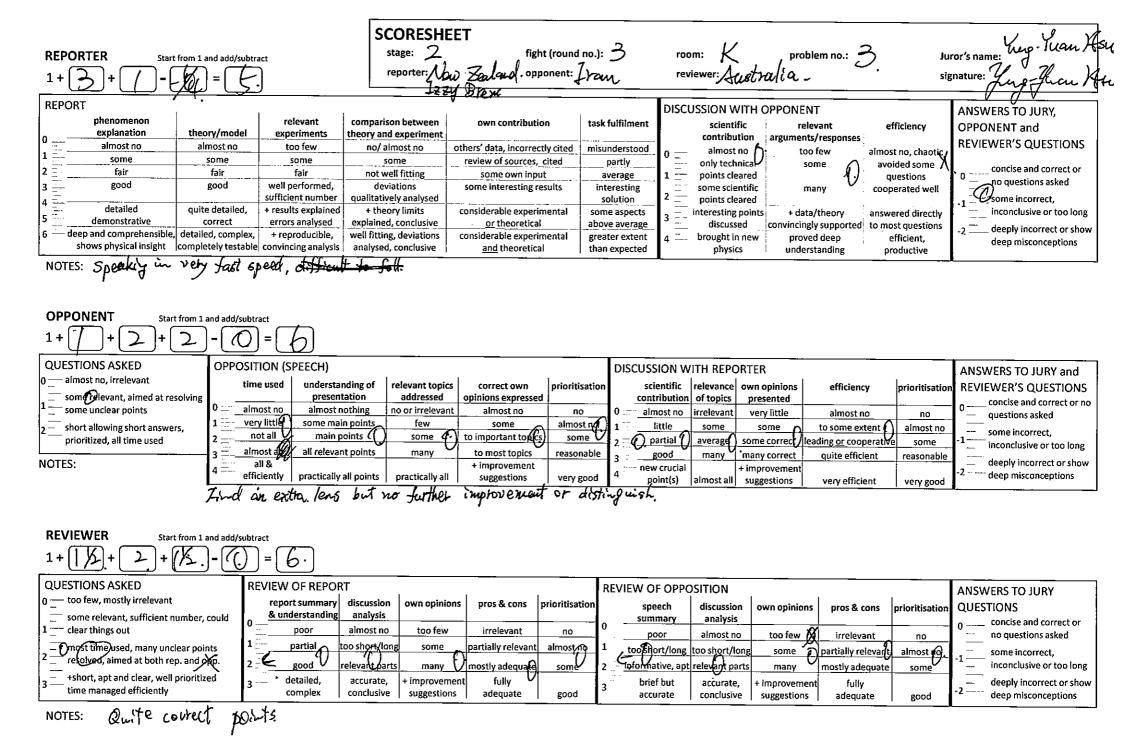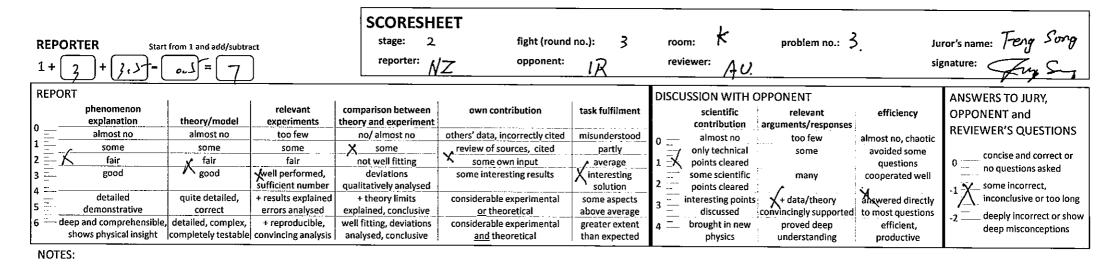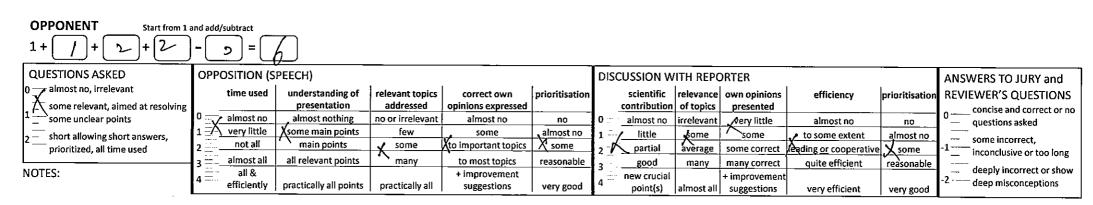| 0 | ✗ concise and correct or no questions asked |
| −1 | some incorrect, inconclusive or too long |
| −2 | deeply incorrect or show deep misconceptions |

NOTES: fd direct / fboy direct / fcon direct
?Vary Speed / Very Nice Distinction fboy   *# more on* (✓) "Reche" fdrag is motion depend
Nt Picking on fdrag Obvious opponent has much more Detailed understand of problem   Nice Job of Instructi
Very Slick!

REVIEWER
Start from 1 and add/subtract

1 + [2] + [2] + [2] − [0] = [7] (7)

QUESTIONS ASKED	REVIEW OF REPORT					REVIEW OF OPPOSITION					ANSWERS TO JURY QUESTIONS
0 — too few, mostly irrelevant		report summary & understanding	discussion analysis	own opinions	pros & cons	prioritisation	speech summary	discussion analysis	own opinions	pros & cons	prioritisation
1 — some relevant, sufficient number, could clear things out	0	poor	almost no	too few	irrelevant	no	poor	almost no	too few	irrelevant	no
2 ✗ most time used, many unclear points resolved, aimed at both rep. and opp.	1	partial	(too short/long)	(some)	(partially relevant)	almost no	too short/long	too short/long	some	(partially relevant)	almost no
	2	(good)	~~relevant parts~~	(many)	(mostly adequate)	(some)	(informative) apt	relevant parts	many	mostly adequate	(some)
3 — +short, apt and clear, well prioritized time managed efficiently	3	detailed, complex	accurate, conclusive	+ improvement suggestions	fully adequate	(good)	(brief but) accurate	~~accurate,~~ conclusive	+ improvement suggestions	fully adequate	good

ANSWERS column:
0	✗ concise and correct or no questions asked
−1	some incorrect, inconclusive or too long
−2	deeply incorrect or show deep misconceptions

NOTES: 1) ~~Poor~~:   4) Excellent Q about
2) friction import
3) odd Q about X prob

SCORESHEET

stage: 3	fight (round no.): 3	room: K	problem no.: 9	Juror's name: Feng Song
reporter: IR	opponent: AU	reviewer: NZ		signature: *(signed)*

REPORTER

Start from 1 and add/subtract

$1 + \boxed{3} + \boxed{2} - \boxed{0} = \boxed{5}$

REPORT

	phenomenon explanation	theory/model	relevant experiments	comparison between theory and experiment	own contribution	task fulfilment
0	almost no	almost no	too few	no/ almost no	others' data, incorrectly cited	misunderstood
1	some	some	some	some	review of sources, cited	partly
2	fair	fair	fair	not well fitting	some own input	average
3	good	good	well performed, sufficient number	deviations qualitatively analysed	some interesting results	interesting solution
4						
5	detailed demonstrative	quite detailed, correct	+ results explained errors analysed	+ theory limits explained, conclusive	considerable experimental or theoretical	some aspects above average
6	deep and comprehensible, shows physical insight	detailed, complex, completely testable	+ reproducible, convincing analysis	well fitting, deviations analysed, conclusive	considerable experimental and theoretical	greater extent than expected

DISCUSSION WITH OPPONENT

	scientific contribution	relevant arguments/responses	efficiency
0	almost no	too few	almost no, chaotic
	only technical	some	avoided some questions
1	points cleared		
	some scientific	many	cooperated well
2	points cleared		
	interesting points	+ data/theory	answered directly
3	discussed	convincingly supported	to most questions
	brought in new	proved deep	efficient,
4	physics	understanding	productive

ANSWERS TO JURY, OPPONENT and REVIEWER'S QUESTIONS

0	concise and correct or no questions asked
-1	some incorrect, inconclusive or too long
-2	deeply incorrect or show deep misconceptions

NOTES:

OPPONENT

Start from 1 and add/subtract

$1 + \boxed{1.5} + \boxed{2.5} + \boxed{2} - \boxed{0} = \boxed{7}$

QUESTIONS ASKED

0	almost no, irrelevant
	some relevant, aimed at resolving
1	some unclear points
2	short allowing short answers, prioritized, all time used

OPPOSITION (SPEECH)

	time used	understanding of presentation	relevant topics addressed	correct own opinions expressed	prioritisation
0	almost no	almost nothing	no or irrelevant	almost no	no
1	very little	some main points	few	some	almost no
2	not all	main points	some	important topics	some
3	almost all	all relevant points	many	to most topics	reasonable
4	all & efficiently	practically all points	practically all	+ improvement suggestions	very good

DISCUSSION WITH REPORTER

	scientific contribution	relevance of topics	own opinions presented	efficiency	prioritisation
0	almost no	irrelevant	very little	almost no	no
1	little	some	some	to some extent	almost no
2	partial	average	some correct	leading or cooperative	some
3	good	many	many correct	quite efficient	reasonable
4	new crucial point(s)	almost all	+ improvement suggestions	very efficient	very good

ANSWERS TO JURY and REVIEWER'S QUESTIONS

0	concise and correct or no questions asked
-1	some incorrect, inconclusive or too long
-2	deeply incorrect or show deep misconceptions

NOTES:

REVIEWER

Start from 1 and add/subtract

$1 + \boxed{1.5} + \boxed{2.2} + \boxed{2.2} - \boxed{0} = \boxed{7}$

QUESTIONS ASKED

0	too few, mostly irrelevant
	some relevant, sufficient number, could
1	clear things out
2	most time used, many unclear points resolved, aimed at both rep. and opp.
3	+short, apt and clear, well prioritized time managed efficiently

REVIEW OF REPORT

	report summary & understanding	discussion analysis	own opinions	pros & cons	prioritisation
0	poor	almost no	too few	irrelevant	no
1	partial	too short/long	some	partially relevant	almost no
2	good	relevant parts	many	mostly adequate	some
3	detailed, complex	accurate, conclusive	+ improvement suggestions	fully adequate	good

REVIEW OF OPPOSITION

	speech summary	discussion analysis	own opinions	pros & cons	prioritisation
0	poor	almost no	too few	irrelevant	no
1	too short/long	too short/long	some	partially relevant	almost no
2	informative, apt	relevant parts	many	mostly adequate	some
3	brief but accurate	accurate, conclusive	+ improvement suggestions	fully adequate	good

ANSWERS TO JURY QUESTIONS

0	concise and correct or no questions asked
-1	some incorrect, inconclusive or too long
-2	deeply incorrect or show deep misconceptions

NOTES:

SCORESHEET

stage: 2   fight (round no.): 3   room: K   problem no.: 3.

reporter: New Zealand. opponent: Iran   reviewer: Australia.
Izzy Brew

Juror's name: Yung-Yuan Hsu

signature: Yung-Yuan Hsu

REPORTER

Start from 1 and add/subtract

1 + [3] + [1] - [0] = [5.]

REPORT

	phenomenon explanation	theory/model	relevant experiments	comparison between theory and experiment	own contribution	task fulfilment
0	almost no	almost no	too few	no/ almost no	others' data, incorrectly cited	misunderstood
1	some	some	some	some	review of sources, cited	partly
2	fair	fair	fair	not well fitting	some own input	average
3	good	good	well performed, sufficient number	deviations qualitatively analysed	some interesting results	interesting solution
4	detailed demonstrative	quite detailed, correct	+ results explained errors analysed	+ theory limits explained, conclusive	considerable experimental or theoretical	some aspects above average
5						
6	deep and comprehensible, shows physical insight	detailed, complex, completely testable	+ reproducible, convincing analysis	well fitting, deviations analysed, conclusive	considerable experimental and theoretical	greater extent than expected

DISCUSSION WITH OPPONENT

	scientific contribution	relevant arguments/responses	efficiency
0	almost no / only technical	too few / some	almost no, chaotic / avoided some X questions
1	points cleared		
2	some scientific points cleared	many	cooperated well
3	interesting points discussed	+ data/theory convincingly supported	answered directly to most questions
4	brought in new physics	proved deep understanding	efficient, productive

ANSWERS TO JURY, OPPONENT and REVIEWER'S QUESTIONS

0	concise and correct or no questions asked
-1	some incorrect, inconclusive or too long
-2	deeply incorrect or show deep misconceptions

NOTES: Speaking in very fast speed, difficult to foll.

OPPONENT

Start from 1 and add/subtract

1 + [7] + [2] + [2] - [0] = [6]

QUESTIONS ASKED

0	almost no, irrelevant
	some relevant, aimed at resolving some unclear points
1	
2	short allowing short answers, prioritized, all time used

OPPOSITION (SPEECH)

	time used	understanding of presentation	relevant topics addressed	correct own opinions expressed	prioritisation
0	almost no	almost nothing	no or irrelevant	almost no	no
1	very little	some main points	few	some	almost no
2	not all	main points	some	to important topics	some
3	almost all	all relevant points	many	to most topics	reasonable
4	all & efficiently	practically all points	practically all	+ improvement suggestions	very good

DISCUSSION WITH REPORTER

	scientific contribution	relevance of topics	own opinions presented	efficiency	prioritisation
0	almost no	irrelevant	very little	almost no	no
1	little	some	some	to some extent	almost no
2	partial	average	some correct	leading or cooperative	some
3	good	many	many correct	quite efficient	reasonable
4	new crucial point(s)	almost all	+ improvement suggestions	very efficient	very good

ANSWERS TO JURY and REVIEWER'S QUESTIONS

0	concise and correct or no questions asked
-1	some incorrect, inconclusive or too long
-2	deeply incorrect or show deep misconceptions

NOTES: Find an extra lens but no further improvement or distinguish.

REVIEWER

Start from 1 and add/subtract

1 + [1½] + [2] + [1½] - [0] = [6.]

QUESTIONS ASKED

0	too few, mostly irrelevant
	some relevant, sufficient number, could clear things out
1	
	most time used, many unclear points resolved, aimed at both rep. and opp.
2	
3	+short, apt and clear, well prioritized time managed efficiently

REVIEW OF REPORT

	report summary & understanding	discussion analysis	own opinions	pros & cons	prioritisation
0	poor	almost no	too few	irrelevant	no
1	partial	too short/long	some	partially relevant	almost no
2	good	relevant parts	many	mostly adequate	some
3	detailed, complex	accurate, conclusive	+ improvement suggestions	fully adequate	good

REVIEW OF OPPOSITION

	speech summary	discussion analysis	own opinions	pros & cons	prioritisation
0	poor	almost no	too few	irrelevant	no
1	too short/long	too short/long	some	partially relevant	almost no
2	informative, apt	relevant parts	many	mostly adequate	some
3	brief but accurate	accurate, conclusive	+ improvement suggestions	fully adequate	good

ANSWERS TO JURY QUESTIONS

0	concise and correct or no questions asked
-1	some incorrect, inconclusive or too long
-2	deeply incorrect or show deep misconceptions

NOTES: Quite correct points

SCORESHEET

stage: 2 **fight (round no.):** 3 **room:** K **problem no.:** 3 **Juror's name:** Hunkat Jo

reporter: New Zealand **opponent:** Iran **reviewer:** Australia **signature:** (signed)

REPORTER

Start from 1 and add/subtract

$1 + \boxed{3} + \boxed{1} - \boxed{\#1} = \boxed{4}$

REPORT

	phenomenon explanation	theory/model	relevant experiments	comparison between theory and experiment	own contribution	task fulfilment
0	almost no	almost no	too few	no/ almost no	others' data, incorrectly cited	misunderstood
1	some	some	some	some	review of sources, cited	partly
2	fair	fair	fair	not well fitting	some own input	average
3	good	good	well performed, sufficient number	deviations qualitatively analysed	some interesting results	interesting solution
4	detailed demonstrative	quite detailed, correct	+ results explained errors analysed	+ theory limits explained, conclusive	considerable experimental or theoretical	some aspects above average
5						
6	deep and comprehensible, shows physical insight	detailed, complex, completely testable	+ reproducible, convincing analysis	well fitting, deviations analysed, conclusive	considerable experimental and theoretical	greater extent than expected

DISCUSSION WITH OPPONENT

	scientific contribution	relevant arguments/responses	efficiency
0	almost no	too few	almost no, chaotic
	only technical	some	avoided some questions
1	points cleared	some	
	some scientific	many	cooperated well
2	points cleared		
3	interesting points discussed	+ data/theory convincingly supported	answered directly to most questions
4	brought in new physics	proved deep understanding	efficient, productive

ANSWERS TO JURY, OPPONENT and REVIEWER'S QUESTIONS

0	concise and correct or no questions asked
-1	some incorrect, inconclusive or too long
-2	deeply incorrect or show deep misconceptions

NOTES:

What is your conclusion?
⇒ Optimal confirm?

Sarcasm, No!
This is discussive not defense.

↓ Unclear

OPPONENT

Start from 1 and add/subtract

$1 + \boxed{1} + \boxed{1} + \boxed{1} - \boxed{0} = \boxed{4}$

QUESTIONS ASKED

0	almost no, irrelevant
1	some relevant, aimed at resolving some unclear points
2	short allowing short answers, prioritized, all time used

OPPOSITION (SPEECH)

	time used	understanding of presentation	relevant topics addressed	correct own opinions expressed	prioritisation
0	almost no	almost nothing	no or irrelevant	almost no	no
1	very little	some main points	few	some	almost no
2	not all	main points	some	to important topics	some
3	almost all	all relevant points	many	to most topics	reasonable
4	all & efficiently	practically all points	practically all	+ improvement suggestions	very good

DISCUSSION WITH REPORTER

	scientific contribution	relevance of topics	own opinions presented	efficiency	prioritisation
0	almost no	irrelevant	very little	almost no	no
1	little	some	some	to some extent	almost no
2	partial	average	some correct	leading or cooperative	some
3	good	many	many correct	quite efficient	reasonable
4	new crucial point(s)	almost all	+ improvement suggestions	very efficient	very good

ANSWERS TO JURY and REVIEWER'S QUESTIONS

0	concise and correct or no questions asked
	some incorrect, inconclusive or too long
-1	
-2	deeply incorrect or show deep misconceptions

NOTES:

Camera. ⟿ Aperture.

REVIEWER

Start from 1 and add/subtract

$1 + \boxed{1.5} + \boxed{1.5} + \boxed{1} - \boxed{0} = \boxed{5}$

QUESTIONS ASKED

0	too few, mostly irrelevant
1	some relevant, sufficient number, could clear things out
2	most time used, many unclear points resolved, aimed at both rep. and opp.
3	+short, apt and clear, well prioritized time managed efficiently

REVIEW OF REPORT

	report summary & understanding	discussion analysis	own opinions	pros & cons	prioritisation
0	poor	almost no	too few	irrelevant	no
1	partial	too short/long	some	partially relevant	almost no
2	good	relevant parts	many	mostly adequate	some
3	detailed, complex	accurate, conclusive	+ improvement suggestions	fully adequate	good

REVIEW OF OPPOSITION

	speech summary	discussion analysis	own opinions	pros & cons	prioritisation
0	poor	almost no	too few	irrelevant	no
1	too short/long	too short/long	some	partially relevant	almost no
2	informative, apt	relevant parts	many	mostly adequate	some
3	brief but accurate	accurate, conclusive	+ improvement suggestions	fully adequate	good

ANSWERS TO JURY QUESTIONS

0	concise and correct or no questions asked
-1	some incorrect, inconclusive or too long
-2	deeply incorrect or show deep misconceptions

NOTES:

Focus → Goal

⟲ No constructor ↑ of what they are missing ⟿

SCORESHEET

stage: 2 fight (round no.): 3 room: K problem no.: 3 Juror's name: *SCHNEDLITZ*
reporter: NEW ZEALAND opponent: IRAN reviewer: AUSTRALIA signature: *Schnel L*

REPORTER

1 + [5] + [2] − [1] = [7]   *Start from 1 and add/subtract*

REPORT

	phenomenon explanation	theory/model	relevant experiments	comparison between theory and experiment	own contribution	task fulfilment
0	almost no	almost no	too few	no/ almost no	others' data, incorrectly cited	misunderstood
1	some	some	some	some	review of sources, cited	partly
2	fair	fair	fair	not well fitting	some own input	average
3	good	good	well performed, sufficient number	deviations qualitatively analysed	some interesting results	interesting solution
4	detailed	quite detailed,	+ results explained	+ theory limits	considerable experimental	some aspects
5	demonstrative	correct	errors analysed	explained, conclusive	or theoretical	above average
6	deep and comprehensible, shows physical insight	detailed, complex, completely testable	+ reproducible, convincing analysis	well fitting, deviations analysed, conclusive	considerable experimental and theoretical	greater extent than expected

DISCUSSION WITH OPPONENT

	scientific contribution	relevant arguments/responses	efficiency
0	almost no	too few	almost no, chaotic
	only technical	some	avoided some
1	points cleared		X questions
	some scientific	many	cooperated well
2 X	points cleared	X	
3	interesting points discussed	+ data/theory convincingly supported	answered directly to most questions
4	brought in new physics	proved deep understanding	efficient, productive

ANSWERS TO JURY, OPPONENT and REVIEWER'S QUESTIONS

0	concise and correct or no questions asked
-1 X	some incorrect, inconclusive or too long
-2	deeply incorrect or show deep misconceptions

NOTES: *Very good phenomena exp. Well exp. Studies. However a little lack of physical knowledge (e.g lim (3/8 + 1/ℓ = 1/5) => 3/8 = 1/5). ... capable in discussion ... Key factors it it influence ... from distance between lens and aperture ☺*

OPPONENT

1 + [3] + [1] + [2.8] − [0] = [6]   *Start from 1 and add/subtract* 5.8

QUESTIONS ASKED

0	almost no, irrelevant
1 X	some relevant, aimed at resolving some unclear points
2	short allowing short answers, prioritized, all time used

NOTES: *Questions not very relevant and no Zon app*

OPPOSITION (SPEECH)

	time used	understanding of presentation	relevant topics addressed	correct own opinions expressed	prioritisation
0	almost no	almost nothing	no or irrelevant	X almost no	no
1	X very little	some main points	X few	some	X almost no
2	not all	X main points	some	to important topics	some
3	almost all	all relevant points	many	to most topics	reasonable
4	all & efficiently	practically all points	practically all	+ improvement suggestions	very good

☺ for distant objects. Asks about .

DISCUSSION WITH REPORTER

	scientific contribution	relevance of topics	own opinions presented	efficiency	prioritisation
0	almost no	irrelevant	very little	almost no	no
1	little	some	some	to some extent	almost no
2	partial	average	some correct	leading or cooperative	some
3	X good	X many	X many correct	X quite efficient	X reasonable
4	new crucial point(s)	almost all	+ improvement suggestions	very efficient	very good

ANSWERS TO JURY and REVIEWER'S QUESTIONS

0	concise and correct or no questions asked
-1	some incorrect, inconclusive or too long
-2	deeply incorrect or show deep misconceptions

REVIEWER

1 + [1.5] + [1.7] + [1.9] − [0] = [6]   *Start from 1 and add/subtract* 6.1

QUESTIONS ASKED

0	too few, mostly irrelevant
1	some relevant, sufficient number, could clear things out
2 X	most time used, many unclear points resolved, aimed at both rep. and opp.
3	+short, apt and clear, well prioritized time managed efficiently

REVIEW OF REPORT

	report summary & understanding	discussion analysis	own opinions	pros & cons	prioritisation
0	poor	almost no	too few	irrelevant	no
1	partial	too short/long	some	partially relevant	X almost no
2	good	X relevant parts	many	mostly adequate	some
3	detailed, complex	accurate, conclusive	X improvement suggestions	fully adequate	good

REVIEW OF OPPOSITION

	speech summary	discussion analysis	own opinions	pros & cons	prioritisation
0	poor	almost no	too few	irrelevant	no
1	X too short/long	too short/long	some	partially relevant	almost no
2	informative, apt	X relevant parts	X many	mostly adequate	X some
3	brief but accurate	accurate, conclusive	+ improvement suggestions	fully adequate	good

ANSWERS TO JURY QUESTIONS

0 X	concise and correct or no questions asked
-1	some incorrect, inconclusive or too long
-2	deeply incorrect or show deep misconceptions

NOTES:

SCORESHEET

stage: **2** fight (round no.): **3** room: **K** problem no.: **3** Juror's name: **MCWATTERS**

reporter: **New Zealand** opponent: **IRAN** reviewer: **Australia** signature: _(signed)_

REPORTER

Start from 1 and add/subtract

$1 + \boxed{3.5} + \boxed{2} - \boxed{1} = \boxed{5.5}$ ⑥

REPORT

	phenomenon explanation	theory/model	relevant experiments	comparison between theory and experiment	own contribution	task fulfilment
0	almost no	almost no	too few	no/ almost no	others' data, incorrectly cited	misunderstood
1	some	some	some	some	review of sources, cited	partly
2	fair	fair	fair	not well fitting	some own input	average
3	good	good	well performed, (sufficient number)	deviations qualitatively analysed	(some interesting results)	interesting (solution)
4/5	detailed demonstrative	quite detailed, (correct)	+ results explained errors analysed	+ theory limits explained, conclusive	considerable experimental or theoretical	(some aspects) above average
6	deep and comprehensible, shows physical insight	detailed, complex, completely testable	+ reproducible, convincing analysis	well fitting, deviations analysed, conclusive	considerable experimental and theoretical	greater extent than expected

DISCUSSION WITH OPPONENT

Very Complimentary

	scientific contribution	relevant arguments/responses	efficiency
0	almost no	too few	almost no, chaotic
	only technical	some	avoided some (questions)
1	points cleared		cooperated well
2	some scientific points cleared	many	
3	interesting points discussed	+ data/theory convincingly supported	answered directly to most questions
4	brought in new physics	proved deep understanding	efficient, productive

ANSWERS TO JURY, OPPONENT and REVIEWER'S QUESTIONS

0	concise and correct or no questions asked
-1	some incorrect, inconclusive or too long
-2	deeply incorrect or show deep misconceptions

NOTES: Magnification @ d_i, How varied was your various lenses? Sharpness model limited. Does Diameter Matter? → Brightness   time Management   ⑩ How did you Decide where to Measure Width?

OPPONENT

Start from 1 and add/subtract

$1 + \boxed{1} + \boxed{1.5} + \boxed{2} - \boxed{1} = \boxed{4}$ ④

QUESTIONS ASKED

0	almost no, irrelevant
1	some relevant, aimed at resolving some unclear points
2	short allowing short answers, prioritized, all time used

OPPOSITION (SPEECH)

	time used	understanding of presentation	relevant topics addressed	correct own opinions expressed	prioritisation
0	almost no	almost nothing	no or irrelevant	(almost no)	no
1	(very little)	some main points	(few)	some	almost no
2	not all	main points	some	to important topics	some
3	almost all	all relevant points	many	to most topics	(reasonable)
4	all & efficiently	practically all points	practically all	+ improvement suggestions	very good

DISCUSSION WITH REPORTER

	scientific contribution	relevance of topics	own opinions presented	efficiency	prioritisation
0	almost no	(irrelevant)	very little	almost no	no
1	(little)	some	(some)	to some extent	(almost no)
2	partial	average	some correct	leading or cooperative	(some)
3	good	many	many correct	quite efficient	reasonable
4	new crucial point(s)	almost all	+ improvement suggestions	very efficient	very good

ANSWERS TO JURY and REVIEWER'S QUESTIONS

0	concise and correct or no questions asked
-1	some incorrect, inconclusive or too long
-2	deeply incorrect or show deep misconceptions

NOTES: → Dark vs Bright mistake Hitting on Corr → Lack of Parameters? / Aperature Position is Not important (?) → Lens will focus all light Rays to focal Point

REVIEWER

Start from 1 and add/subtract

$1 + \boxed{2.5} + \boxed{2.2} + \boxed{2} - \boxed{1} = \boxed{6.7}$ ⑦

Increase Aper increase M

QUESTIONS ASKED

0	too few, mostly irrelevant
1	some relevant, sufficient number, could clear things out
2	most time used, many unclear points resolved, aimed at both rep. and opp.
3	+short, apt and clear, well prioritised time managed efficiently

REVIEW OF REPORT

	report summary & understanding	discussion analysis	own opinions	pros & cons	prioritisation
0	poor	almost no	too few	irrelevant	no
1	partial	too short/long	some	partially relevant	almost no
2	good	(relevant parts)	(many)	mostly adequate	(some)
3	(detailed complex)	accurate, conclusive	+ improvement suggestions	(fully adequate)	(good)

REVIEW OF OPPOSITION

	speech summary	discussion analysis	own opinions	pros & cons	prioritisation
0	poor	almost no	too few	irrelevant	no
1	too short/long	too short/long	(some)	partially relevant	almost no
2	(informative, apt)	(relevant parts)	(many)	mostly adequate	(some)
3	(brief but accurate)	accurate, conclusive	+ improvement suggestions	(fully adequate)	good

ANSWERS TO JURY QUESTIONS

0	concise and correct or no questions asked
-1	some incorrect, inconclusive or too long
-2	deeply incorrect or show deep misconceptions

NOTES: → Diam of App meas → is Brightest Related to Magnification
→ Explain Graph.   → Excellent Q
→ Negative / Pos. image
→ Did w/ lenses

SCORESHEET

stage: **2** fight (round no.): **3** room: **K** problem no.: **3.** Juror's name: **Feng Song**

reporter: **NZ** opponent: **IR** reviewer: **AU** signature: **Feng Song**

REPORTER

Start from 1 and add/subtract

$1 + \boxed{3} + \boxed{3.5} - \boxed{0.5} = \boxed{7}$

REPORT

	phenomenon explanation	theory/model	relevant experiments	comparison between theory and experiment	own contribution	task fulfilment
0	almost no	almost no	too few	no/ almost no	others' data, incorrectly cited	misunderstood
1	some	some	some	some (X)	review of sources, cited	partly
2	fair (X)	fair (X)	fair	not well fitting (X)	some own input	average
3	good	good (X)	well performed, sufficient number	deviations qualitatively analysed	some interesting results	interesting solution
4	detailed demonstrative	quite detailed, correct	+ results explained errors analysed	+ theory limits explained, conclusive	considerable experimental or theoretical	some aspects above average
5						
6	deep and comprehensible, shows physical insight	detailed, complex, completely testable	+ reproducible, convincing analysis	well fitting, deviations analysed, conclusive	considerable experimental and theoretical	greater extent than expected

DISCUSSION WITH OPPONENT

	scientific contribution	relevant arguments/responses	efficiency
0	almost no	too few	almost no, chaotic
	only technical	some	avoided some questions
1	points cleared (X)	many	cooperated well
	some scientific		
2	points cleared		
	interesting points	+ data/theory convincingly supported	answered directly to most questions
3	discussed		
4	brought in new physics	proved deep understanding	efficient, productive

ANSWERS TO JURY, OPPONENT and REVIEWER'S QUESTIONS

0	concise and correct or no questions asked
-1	some incorrect, inconclusive or too long (X)
-2	deeply incorrect or show deep misconceptions

NOTES:

OPPONENT

Start from 1 and add/subtract

$1 + \boxed{1} + \boxed{2} + \boxed{2} - \boxed{0} = \boxed{6}$

QUESTIONS ASKED

0	almost no, irrelevant
1	some relevant, aimed at resolving some unclear points
2	short allowing short answers, prioritized, all time used

NOTES:

OPPOSITION (SPEECH)

	time used	understanding of presentation	relevant topics addressed	correct own opinions expressed	prioritisation
0	almost no	almost nothing	no or irrelevant	almost no	no
1	very little (X)	some main points (X)	few	some	almost no
2	not all	main points	some (X)	to important topics (X)	some (X)
3	almost all	all relevant points	many	to most topics	reasonable
4	all & efficiently	practically all points	practically all	+ improvement suggestions	very good

DISCUSSION WITH REPORTER

	scientific contribution	relevance of topics	own opinions presented	efficiency	prioritisation
0	almost no	irrelevant	very little	almost no	no
1	little	some	some	to some extent	almost no
2	partial	average	some correct	leading or cooperative	some
3	good	many	many correct	quite efficient	reasonable
4	new crucial point(s)	almost all	+ improvement suggestions	very efficient	very good

ANSWERS TO JURY and REVIEWER'S QUESTIONS

0	concise and correct or no questions asked
-1	some incorrect, inconclusive or too long
-2	deeply incorrect or show deep misconceptions

NOTES:

REVIEWER

Start from 1 and add/subtract

$1 + \boxed{1.5} + \boxed{2.5} + \boxed{3} - \boxed{} = \boxed{8}$

QUESTIONS ASKED

0	too few, mostly irrelevant
1	some relevant, sufficient number, could clear things out
2	most time used, many unclear points resolved, aimed at both rep. and opp.
3	+short, apt and clear, well prioritized time managed efficiently

REVIEW OF REPORT

	report summary & understanding	discussion analysis	own opinions	pros & cons	prioritisation
0	poor	almost no	too few	irrelevant	no
1	partial	too short/long	some (X)	partially relevant	almost no
2	good (X)	relevant parts (X)	many	mostly adequate	some
3	detailed, complex	accurate, conclusive	+ improvement suggestions	fully adequate	good

REVIEW OF OPPOSITION

	speech summary	discussion analysis	own opinions	pros & cons	prioritisation
0	poor	almost no	too few	irrelevant	no
1	too short/long	too short/long	some	partially relevant	almost no
2	informative, apt	relevant parts	many (X)	mostly adequate	some (X)
3	brief but accurate	accurate, conclusive	+ improvement suggestions	fully adequate	good

ANSWERS TO JURY QUESTIONS

0	concise and correct or no questions asked
-1	some incorrect, inconclusive or too long (X)
-2	deeply incorrect or show deep misconceptions

NOTES:

SCORESHEET

stage: _1._ fight (round no.): _3_ room: _K_ problem no.: _8_

reporter: _Australian_ opponent: _New Zealand._ reviewer: _Iran._

Juror's name: _Yeg-Koan Ha_
signature: _Yung-Yuan Han_

REPORTER

Start from 1 and add/subtract

$1 + [3\frac{1}{2}] + [1\frac{1}{2}] - [\frac{1}{4}] = [6]$

REPORT

	phenomenon explanation	theory/model	relevant experiments	comparison between theory and experiment	own contribution	task fulfilment
0	almost no	almost no	too few	no/ almost no	others' data, incorrectly cited	misunderstood
1	some	some	some	some	review of sources, cited	partly
2	fair	fair	fair	not well fitting	some own input	average
3	good	good	well performed, sufficient number	deviations qualitatively analysed	some interesting results	interesting solution
4	detailed	quite detailed	+ results explained errors analysed	+ theory limits explained, conclusive	considerable experimental or theoretical	some aspects above average
5	demonstrative	correct				
6	deep and comprehensible, shows physical insight	detailed, complex, completely testable	+ reproducible, convincing analysis	well fitting, deviations analysed, conclusive	considerable experimental and theoretical	greater extent than expected

DISCUSSION WITH OPPONENT

	scientific contribution	relevant arguments/responses	efficiency
0	almost no	too few	almost no, chaotic
	only technical	some	avoided some questions
1	points cleared		
	some scientific	many	cooperated well
2	points cleared		
3	interesting points discussed	+ data/theory convincingly supported	answered directly to most questions
4	brought in new physics	proved deep understanding	efficient, productive

ANSWERS TO JURY, OPPONENT and REVIEWER'S QUESTIONS

0	concise and correct or no questions asked
-1	some incorrect, inconclusive or too long
-2	deeply incorrect or show deep misconceptions

NOTES:

OPPONENT

Start from 1 and add/subtract

$1 + [1] + [2\frac{3}{4}] + [2\frac{3}{4}] - [0] = [7]$

QUESTIONS ASKED

0	almost no, irrelevant
1	some relevant, aimed at resolving some unclear points
2	short allowing short answers, prioritized, all time used

NOTES:

OPPOSITION (SPEECH)

	time used	understanding of presentation	relevant topics addressed	correct own opinions expressed	prioritisation
0	almost no	almost nothing	no or irrelevant	almost no	no
1	very little	some main points	few	some	almost no
2	not all	main points	some	to important topics	some
3	almost all	all relevant points	many	to most topics	reasonable
4	all & efficiently	practically all points	practically all	+ improvement suggestions	very good

DISCUSSION WITH REPORTER

	scientific contribution	relevance of topics	own opinions presented	efficiency	prioritisation
0	almost no	irrelevant	very little	almost no	no
1	little	some	some	to some extent	almost no
2	partial	average	some correct	leading or cooperative	some
3	good	many	many correct	quite efficient	reasonable
4	new crucial point(s)	almost all	+ improvement suggestions	very efficient	very good

ANSWERS TO JURY and REVIEWER'S QUESTIONS

0	concise and correct or no questions asked
-1	some incorrect, inconclusive or too long
-2	deeply incorrect or show deep misconceptions

REVIEWER

Start from 1 and add/subtract

$1 + [1] + [1\frac{1}{2}] + [1\frac{1}{2}] - [0] = [5]$

QUESTIONS ASKED

0	too few, mostly irrelevant
1	some relevant, sufficient number, could clear things out
2	most time used, many unclear points resolved, aimed at both rep. and opp.
3	+short, apt and clear, well prioritized time managed efficiently

REVIEW OF REPORT

	report summary & understanding	discussion analysis	own opinions	pros & cons	prioritisation
0	poor	almost no	too few	irrelevant	no
1	partial	too short/long	some	partially relevant	almost no
2	good	relevant parts	many	mostly adequate	some
3	detailed, complex	accurate, conclusive	+ improvement suggestions	fully adequate	good

REVIEW OF OPPOSITION

	speech summary	discussion analysis	own opinions	pros & cons	prioritisation
0	poor	almost no	too few	irrelevant	no
1	too short/long	too short/long	some	partially relevant	almost no
2	informative, apt	relevant parts	many	mostly adequate	some
3	brief but accurate	accurate, conclusive	+ improvement suggestions	fully adequate	good

ANSWERS TO JURY QUESTIONS

0	concise and correct or no questions asked
-1	some incorrect, inconclusive or too long
-2	deeply incorrect or show deep misconceptions

NOTES:

SCORESHEET

stage: **1** fight (round no.): **3** room: **K** problem no.: **8** Juror's name: **Hunkook Jo**

reporter: **Australia** opponent: **New Zealand** reviewer: **Iren** signature: *(signed)*

REPORTER

Start from 1 and add/subtract

$1 + \boxed{-2} + \boxed{2} - \boxed{1} = \boxed{4}$

REPORT

	phenomenon explanation	theory/model	relevant experiments	comparison between theory and experiment	own contribution	task fulfilment
0	almost no	almost no	too few	no/ almost no	others' data, incorrectly cited	misunderstood
1	some	some	some	*(some)*	review of sources, cited	partly
2	*(fair)*	*(fair)*	fair	not well fitting	some *(own)* input	average
3	good	good	well performed, sufficient number	deviations qualitatively analysed	some interesting results	interesting solution
4	detailed demonstrative	quite detailed, correct	+ results explained errors analysed	+ theory limits explained, conclusive	considerable experimental or theoretical	some aspects above average
5						
6	deep and comprehensible, shows physical insight	detailed, complex, completely testable	+ reproducible, convincing analysis	well fitting, deviations analysed, conclusive	considerable experimental and theoretical	greater extent than expected

DISCUSSION WITH OPPONENT

	scientific contribution	relevant arguments/responses	efficiency
0	almost no	too few	almost no, chaotic
	only technical	some	avoided some questions
1	points cleared		cooperated well
2	some scientific points cleared	*(many)*	
3	interesting points discussed	+ data/theory convincingly supported	answered directly to most questions
4	brought in new physics	proved deep understanding	efficient, productive

ANSWERS TO JURY, OPPONENT and REVIEWER'S QUESTIONS

0	concise and correct or no questions asked
(-1)	some incorrect, inconclusive or too long
-2	deeply incorrect or show deep misconceptions

NOTES:

(Role of knowledge—edge

OPPONENT

Start from 1 and add/subtract   fit.

$1 + \boxed{1} + \boxed{\frac{3}{\cancel{}}} + \boxed{\frac{2}{\cancel{}}} - \boxed{0} = \boxed{6}$

QUESTIONS ASKED

0	almost no, irrelevant
(1)	some relevant, aimed at resolving some unclear points
2	short allowing short answers, prioritized, all time used

OPPOSITION (SPEECH)

	time used	understanding of presentation	relevant topics addressed	correct own opinions expressed	prioritisation
0	almost no	almost nothing	no or irrelevant	almost no	no
1	very little	some main points	few	*(some)*	almost no
2	not all	main points	*(some)*	to important topics	some
3	almost all	all relevant points	many	to most topics	reasonable
4	all & efficiently	practically all points	practically all	+ improvement suggestions	very good

DISCUSSION WITH REPORTER

	scientific contribution	relevance of topics	own opinions presented	efficiency	prioritisation
0	almost no	irrelevant	very little	almost no	no
1	little	some	*(some)*	to some extent	almost no
2	partial	average	some correct	leading of cooperative	*(some)*
3	good	many	many correct	quite efficient	reasonable
4	new crucial point(s)	almost all	+ improvement suggestions	very efficient	very good

ANSWERS TO JURY and REVIEWER'S QUESTIONS

(0)	concise and correct or no questions asked
-1	some incorrect, inconclusive or too long
-2	deeply incorrect or show deep misconceptions

NOTES:

Temperature (just room?)   Ambiguous   (I, J)   (I, J)   Temperature   Just tackled only a couple of things
What are the reporters missing regarding the assumption?

REVIEWER

Start from 1 and add/subtract

$1 + \boxed{1.5} + \boxed{1} + \boxed{1} - \boxed{0.5} = \boxed{4}$

QUESTIONS ASKED

0	too few, mostly irrelevant
1	some relevant, sufficient number, could clear things out
(0)	
2	most time used, many unclear points resolved, aimed at both rep. and opp.
3	+short, apt and clear, well prioritized time managed efficiently

REVIEW OF REPORT

	report summary & understanding	discussion analysis	own opinions	pros & cons	prioritisation
0	poor	almost no	too few	irrelevant	*(no)*
1	partial	too short/long	*(some)*	partially relevant	almost no
2	good	relevant parts	many	mostly adequate	some
3	detailed, complex	accurate, conclusive	+ improvement suggestions	fully adequate	good

REVIEW OF OPPOSITION

	speech summary	discussion analysis	own opinions	pros & cons	prioritisation
0	poor	almost no	too few	irrelevant	*(no)*
1	too short/long	too short/long	*(some)*	partially relevant	almost no
2	informative, apt	relevant parts	many	mostly adequate	some
3	brief but accurate	accurate, conclusive	+ improvement suggestions	fully adequate	good

ANSWERS TO JURY QUESTIONS

0	concise and correct or no questions asked
(-1)	some incorrect, inconclusive or too long
-2	deeply incorrect or show deep misconceptions

NOTES:

Density.

Misunderstanding

SCORESHEET

stage: 1   fight (round no.): 3   room: K   problem no.: 8   Juror's name: McWaters

reporter: Australia   opponent: New Zealand   reviewer: IRAN   signature: [signature]

REPORTER

1 + [4.75] + [3] − [0.5] = 8.25 → 8

REPORT

	phenomenon explanation	theory/model	relevant experiments	comparison between theory and experiment	own contribution	task fulfilment
0	almost no	almost no	too few	no/ almost no	others' data, incorrectly cited	misunderstood
1	some	some	(some)	some	review of sources, cited	partly
2	fair	fair	fair	not well fitting	some own input	average
3	good	good	well performed, sufficient number	deviations (qualitatively analysed)	some interesting results	interesting solution
4	detailed demonstrative	(quite detailed, correct)	+ results explained errors analysed	+ theory limits explained, conclusive	(considerable experimental or theoretical)	(some aspects above average)
5						
6	deep and comprehensible, shows physical insight	detailed, complex, completely testable	+ reproducible, convincing analysis	well fitting, deviations analysed, conclusive	considerable experimental and theoretical	greater extent than expected

DISCUSSION WITH OPPONENT

	scientific contribution	relevant arguments/responses	efficiency
0	almost no	too few	almost no, chaotic
	only technical	some	avoided some questions
1	points cleared		cooperated well
2	some scientific points cleared	(many)	
3	interesting points discussed	+ data/theory convincingly supported	answered directly to most questions
4	brought in new physics	proved deep understanding	(efficient, productive)

ANSWERS TO JURY, OPPONENT and REVIEWER'S QUESTIONS

0	✗ concise and correct or no questions asked
−1	✗ some incorrect, inconclusive or too long
−2	deeply incorrect or show deep misconceptions

NOTES: "Light slows on interacting w/ matter", Ideal gas density formula   Parabolic/concave mirror / Fitted Data   Pixel intensity density   Very Smart   Excellent efficiencies

OPPONENT

1 + [1.5-2] + [3.5] + [3] − [0.5] = 8.5 → 8

QUESTIONS ASKED

0	almost no, irrelevant
1	some relevant, aimed at resolving some unclear points
2	✗ short allowing short answers, prioritized, all time used

NOTES: 1) Air temp / Water Bath   2) Varied Parameter   3) Phase Velocity   4) Pixel Density

OPPOSITION (SPEECH)

	time used	understanding of presentation	relevant topics addressed	correct own opinions expressed	prioritisation
0	almost no	almost nothing	no or irrelevant	almost no	no
1	very little	some main points	few	some	almost no
2	not all	main points	some	to important topics	some
3	(almost all)	all relevant points	(many)	to (most topics)	reasonable
4	all & efficiently	(practically all points)	practically all	+ improvement suggestions	very good

DISCUSSION WITH REPORTER

	scientific contribution	relevance of topics	own opinions presented	efficiency	prioritisation
0	almost no	irrelevant	very little	almost no	no
1	little	some	some	to some extent	almost no
2	partial	average	(some correct)	leading or cooperative	some
3	(good)	many	(many correct)	quite efficient	(reasonable)
4	new crucial point(s)	(almost all)	+ improvement suggestions	(very efficient)	very good

ANSWERS TO JURY and REVIEWER'S QUESTIONS

0	✗ concise and correct or no questions asked
−1	✗ some incorrect, inconclusive or too long
−2	deeply incorrect or show deep misconceptions

Very Smooth opposition / density versus density gradient
"Can we apply Snell's law on a density gra?" Excellent interac

REVIEWER

1 + [2] + [1.5] + [1.5] − [0.5] = 5.5 → 6

QUESTIONS ASKED

0	too few, mostly irrelevant
1	some relevant, sufficient number, could clear things out
2	✗ most time used, many unclear points resolved, aimed at both rep. and opp.
3	+short, apt and clear, well prioritized time managed efficiently

REVIEW OF REPORT

	report summary & understanding	discussion analysis	own opinions	pros & cons	prioritisation
0	poor	almost no	(too few)	irrelevant	no
1	(partial)	too short/long	some	partially relevant	almost no
2	good	relevant parts	many	(mostly adequate)	(some)
3	detailed, complex	accurate, conclusive	+ improvement suggestions	fully adequate	(good)

REVIEW OF OPPOSITION

	speech summary	discussion analysis	own opinions	pros & cons	prioritisation
0	poor	almost no	(too few)	irrelevant	no
1	too short/long	too short/long	(some)	partially relevant	almost no
2	informative, apt	relevant parts	many	mostly adequate	(some)
3	brief but accurate	accurate, conclusive	+ improvement suggestions	fully adequate	good

ANSWERS TO JURY QUESTIONS

0	✗ concise and correct or no questions asked
−1	✗ some incorrect, inconclusive or too long
−2	deeply incorrect or show deep misconceptions

NOTES: → Setup Q   → Lack of Photos?   - High Density   → Math unclear   ⊛ Concavity have an Effect

SCORESHEET

stage: 1   fight (round no.): 3   room: K   problem no.: 8   Juror's name: SCHMEDLITZ

reporter: AUSTRALIA   opponent: NEW ZEALAND   reviewer: IRAN   signature: S/hmol M.

REPORTER

Start from 1 and add/subtract

$1 + \boxed{3.1} + \boxed{2} - \boxed{0.5} = \boxed{6}$ 5.6

REPORT

	phenomenon explanation	theory/model	relevant experiments	comparison between theory and experiment	own contribution	task fulfilment
0	almost no	almost no	too few	no/ almost no	others' data, incorrectly cited	misunderstood
1	some	some	some	some	review of sources, cited	partly
2	fair	fair	fair	not well fitting	some own input	average
3	good	good	well performed, sufficient number	deviations qualitatively analysed	some interesting results	interesting solution
4	detailed demonstrative	quite detailed, correct	+ results explained errors analysed	+ theory limits explained, conclusive	considerable experimental or theoretical	some aspects above average
5						
6	deep and comprehensible, shows physical insight	detailed, complex, completely testable	+ reproducible, convincing analysis	well fitting, deviations analysed, conclusive	considerable experimental and theoretical	greater extent than expected

DISCUSSION WITH OPPONENT

	scientific contribution	relevant arguments/responses	efficiency
0	almost no	too few	almost no, chaotic
	only technical	some	avoided some questions
1	points cleared		
	some scientific	many	cooperated well
2	points cleared		
3	interesting points discussed	+ data/theory convincingly supported	answered directly to most questions
4	brought in new physics	proved deep understanding	efficient, productive

ANSWERS TO JURY, OPPONENT and REVIEWER'S QUESTIONS

0	concise and correct or no questions asked
-1	some incorrect, inconclusive or too long
-2	deeply incorrect or show deep misconceptions

NOTES: Very detailed phenomenon exp. Nice idea of visualizing. however insufficient measurements. Only block, so error analyses

OPPONENT

Start from 1 and add/subtract

$1 + \boxed{0.8} + \boxed{2} + \boxed{2.8} - \boxed{0} = \boxed{7}$ 6.6

QUESTIONS ASKED

0	almost no, irrelevant
1	some relevant, aimed at resolving some unclear points
2	short allowing short answers, prioritized, all time used

OPPOSITION (SPEECH)

	time used	understanding of presentation	relevant topics addressed	correct own opinions expressed	prioritisation
0	almost no	almost nothing	no or irrelevant	almost no	no
1	very little	some main points	few	some	almost no
2	not all	main points	some	to important topics	some
3	almost all	all relevant points	many	to most topics	reasonable
4	all & efficiently	practically all points	practically all	+ improvement suggestions	very good

DISCUSSION WITH REPORTER

	scientific contribution	relevance of topics	own opinions presented	efficiency	prioritisation
0	almost no	irrelevant	very little	almost no	no
1	little	some	some	to some extent	almost no
2	partial	average	some correct	leading or cooperative	some
3	good	many	many correct	quite efficient	reasonable
4	new crucial point(s)	almost all	+ improvement suggestions	very efficient	very good

ANSWERS TO JURY and REVIEWER'S QUESTIONS

0	concise and correct or no questions asked
-1	some incorrect, inconclusive or too long
-2	deeply incorrect or show deep misconceptions

NOTES: ⊕ Air T measurement and ⊖ block T. ⊖ Pixel intensity. Gradient corresponds to differences, ⊕ Knife edge, ⊕ Gradients visualization, ⊖

REVIEWER

Start from 1 and add/subtract

$1 + \boxed{0.5} + \boxed{1} + \boxed{1.2} - \boxed{0.5} = \boxed{4}$ 3.5

QUESTIONS ASKED

0	too few, mostly irrelevant
	some relevant, sufficient number, could clear things out
1	
2	most time used, many unclear points resolved, aimed at both rep. and opp.
3	+short, apt and clear, well prioritized time managed efficiently

REVIEW OF REPORT

	report summary & understanding	discussion analysis	own opinions	pros & cons	prioritisation
0	poor	almost no	too few	irrelevant	no
1	partial	too short/long	some	partially relevant	almost no
2	good	relevant parts	many	mostly adequate	some
3	detailed, complex	accurate, conclusive	+ improvement suggestions	fully adequate	good

REVIEW OF OPPOSITION

	speech summary	discussion analysis	own opinions	pros & cons	prioritisation
0	poor	almost no	too few	irrelevant	no
1	too short/long	too short/long	some	partially relevant	almost no
2	informative, apt	relevant parts	many	mostly adequate	some
3	brief but accurate	accurate, conclusive	+ improvement suggestions	fully adequate	good

ANSWERS TO JURY QUESTIONS

0	concise and correct or no questions asked
-1	some incorrect, inconclusive or too long
-2	deeply incorrect or show deep misconceptions

NOTES: ⊖ high density gases, only few own opinion, ⊕error estimate no own idea

SCORESHEET

stage: **1**	fight (round no.): **3**	room:	problem no.: **8**	Juror's name: **Feng Song**
reporter: **AUSTRLIA**	opponent: **NZ**	reviewer: **IR**		signature:

REPORTER

Start from 1 and add/subtract

1 + [**2**] + [**3**] − [**0**] = [**6**]

REPORT

	phenomenon explanation	theory/model	relevant experiments	comparison between theory and experiment	own contribution	task fulfilment
0	almost no	almost no	too few	no/ almost no	others' data, incorrectly cited	misunderstood
1	some (X)	some	some (X)	some (X)	review of sources, cited (X)	partly
2	fair	fair (X)	fair (X)	not well fitting	some own input	average
3	good	good (X)	well performed, sufficient number	deviations qualitatively analysed	some interesting results	interesting solution (X)
4	detailed demonstrative	quite detailed, correct	+ results explained errors analysed	+ theory limits explained, conclusive	considerable experimental or theoretical	some aspects above average
5						
6	deep and comprehensible, shows physical insight	detailed, complex, completely testable	+ reproducible, convincing analysis	well fitting, deviations analysed, conclusive	considerable experimental and theoretical	greater extent than expected

DISCUSSION WITH OPPONENT

	scientific contribution	relevant arguments/responses	efficiency
0	almost no	too few	almost no, chaotic
	only technical	some	avoided some questions
1	points cleared (X)		
	some scientific	many	cooperated well (X)
2	points cleared		
3	interesting points discussed	+ data/theory convincingly supported	answered directly to most questions
4	brought in new physics	proved deep understanding	efficient, productive

ANSWERS TO JURY, OPPONENT and REVIEWER'S QUESTIONS

0	concise and correct or no questions asked (X)
−1	some incorrect, inconclusive or too long
−2	deeply incorrect or show deep misconceptions

NOTES:

OPPONENT

Start from 1 and add/subtract

1 + [**1**] + [**2.5**] + [**1.5**] − [**0**] = [**6**]

QUESTIONS ASKED

0	almost no, irrelevant
1	some relevant, aimed at resolving some unclear points (X)
2	short allowing short answers, prioritized, all time used

OPPOSITION (SPEECH)

	time used	understanding of presentation	relevant topics addressed	correct own opinions expressed	prioritisation
0	almost no	almost nothing	no or irrelevant	almost no	no
1	very little (X)	some main points	few	some	almost no
2	not all (X)	main points (X)	some (X)	to important topics	some
3	almost all	all relevant points	many	to most topics	reasonable
4	all & efficiently	practically all points	practically all	+ improvement suggestions	very good

DISCUSSION WITH REPORTER

	scientific contribution	relevance of topics	own opinions presented	efficiency	prioritisation
0	almost no	irrelevant	very little	almost no	no
1	little (X)	some (X)	some (X)	to some extent (X)	almost no
2	partial	average (X)	some correct	leading or cooperative	some (X)
3	good	many	many correct	quite efficient	reasonable
4	new crucial point(s)	almost all	+ improvement suggestions	very efficient	very good

ANSWERS TO JURY and REVIEWER'S QUESTIONS

0	concise and correct or no questions asked (X)
−1	some incorrect, inconclusive or too long
−2	deeply incorrect or show deep misconceptions

NOTES:

REVIEWER

Start from 1 and add/subtract

1 + [**1**] + [**1.5**] + [**1.5**] − [**0**] = [**5**]

QUESTIONS ASKED

0	too few, mostly irrelevant
1	some relevant, sufficient number, could clear things out (X)
2	most time used, many unclear points resolved, aimed at both rep. and opp.
3	+short, apt and clear, well prioritized time managed efficiently

REVIEW OF REPORT

	report summary & understanding	discussion analysis	own opinions	pros & cons	prioritisation
0	poor (X)	almost no (X)	too few (X)	irrelevant (X)	no
1	partial	too short/long (X)	some	partially relevant (X)	almost no
2	good	relevant parts	many	mostly adequate	some (X)
3	detailed, complex	accurate, conclusive	+ improvement suggestions	fully adequate	good

REVIEW OF OPPOSITION

	speech summary	discussion analysis	own opinions	pros & cons	prioritisation
0	poor	almost no (X)	too few (X)	irrelevant	no (X)
1	too short/long	too short/long	some	partially relevant (X)	almost no
2	informative, apt	relevant parts	many	mostly adequate	some
3	brief but accurate	accurate, conclusive	+ improvement suggestions	fully adequate	good

ANSWERS TO JURY QUESTIONS

0	concise and correct or no questions asked (X)
−1	some incorrect, inconclusive or too long
−2	deeply incorrect or show deep misconceptions

NOTES:

JYPT 2017 SINGAPORE

Juror	Team	Stage 1			Stage 2			Stage 3			Stage 4		
		Australia Rep	New Zealand Opp	Iran Rev	New Zealand Rep	Iran Opp	Australia Rev	Iran Rep	Australia Opp	New Zealand Rev	Rep	Opp	Rev
Yung-Yuan Hsu		6	7	5	5	6	6	3	5	7			
Hunkak Jo		4	6	4	4	4	5	3	6	6			
William McWatters		8	8	6	6	4	7	3	7	7			
Martin Schnedlitz		6	7	4	7	6	6	4	6	7			
Feng Song		6	6	5	7	6	7	5	7	7			
Acting Team Member		Xuan-Nghi Pham	Otis Rea	Ayda Rasouliastani	Izzy Bremner	Aryan Yousefli	Daniel Campbell	Nikasadat Emami	Xuan-Nghi Pham	Finnegan Messerli			
Rejected Problems		NIL			NIL			NIL					
Accepted Problem		12. Visualising density			3. Single lens telescope			9. Ball in a tube					

Signature Fight Assistant: .... Double-checked with Scoring Guidelines by second Fight Assistant (signature): ....