OCMC

Results

Ontario Invitational Mathematics Exam

2025

Comments on the Paper

Overall Comments

The problems on this year's OIME paper were less varied in difficulty and the average scores on the first 6 problems were all fairly balanced. This meant that no problem was easy, so every successful solve required considerable effort. We hope this also means that every problem was interesting to solve. Despite this, we were pleased to see that the contestants did well on the problems, with a similar average score to last year. It was also nice to see that some students have returned after last year's OIME, and we hope that all students enjoyed the event and will consider joining us again next year.

Average: 38.4/100
Median: 42/100

Specific Comments by Problem

1. Average: 7.48/10 | Median: 10/10
Most contestants made a variable substitution and solved the resulting quadratic in the intended way. Some calculation errors occurred when trying to factor or solve the quadratic. A few contestants also factored the original quartic polynomial and were successful.

2. Average: 5.10/10 | Median: 4/10
Most contestants were able to analyze the sequence using the least common multiple of 3, 5, 7. Lots of logical errors were made when computing how many numbers were left out of every group of 105 integers. Lots of calculation errors were also made. In particular, 1056 was a tricky pitfall.

3. Average: 4.45/10 | Median: 2/10
Most contestants approached the problem the intended way. Lots of contestants mistook the problem as moving between vertices rather than boxes, and some reasoned incorrectly about the number of possible up and down moves. Some calculation errors also occurred when computing 35 x 128.

4. Average: 5.10/10 | Median: 9/10
Most contestants who attempted this problem were successful. Solutions were presented in a variety of ways and often deviated from the intended solution. Interestingly, some contestants did not realize that they had the right proof within irrelevant rough work.

5. Average: 6.07/10 | Median: 9/10
Most contestants were successful in grouping the later terms in the recursive relation and simplifying it. When telescoping, some errors included missing the negative sign during the factoring process and taking the wrong starting point, which resulted in an incorrect answer of 0.

6. Average: 5.66/10 | Median: 10/10
Most contestants who attempted this problem were successful. A variety of solutions were presented, mostly through manipulating right triangles. There were multiple interpretations of this problem regarding the line or line segment EF, and the grading adjusted to each individual interpretation.

7. Average: 0.79/10 | Median: 0/10
Very few contestants made any progress on this problem. Those who did were mostly successful. Partial marks were awarded for correctly stating the trivial losing state and observing patterns from there.

Comments on the Paper

8. Average: 2.52/10 | Median: 0/10
Lots of contestants attempted this problem. Most had the correct intuition of arranging the sequence in the optimal way, but few proved it correctly with algebra. Many made assumptions that were left unproven or quoted AM-GM in incorrect ways.

9. Average: 0.34/10 | Median: 0/10
None of the contestants were able to obtain any marks for this problem except for one full-solve. A variety of approaches were made, including coordinate bashing and angle chasing, but almost all were either incorrect or incomplete.

10. Average: 0.90/10 | Median: 0/10
No contestant was able to full-solve this problem. A variety of approaches were made. Most contestants who attempted this problem had the intuition for the answer and were able to prove that $a_n = n$. Lots of incorrect or unproven assumptions were made.

Please visit our website at ontariocmc.ca/past-contests to download the OIME 2025 papers and solutions.

Awards

Overall Awards

Champion	Jason Chen	Leading Aces Academy	Grade 11
Second	Allen Li	St. Robert Catholic High School	Grade 11
Third	Haotian Shen	Bur Oak Secondary School	Grade 11
Fourth	Jessica Pu	St. Robert Catholic High School	Grade 11
Fifth	Richard Zhang	Laurel Heights Secondary School	Grade 10
-Tenth	Jayden Lee	Abbey Park High School	Grade 10
	Maseeh Ghodsi	Laurel Heights Secondary School	Grade 11
	Kevin Kang	The Woodlands Secondary School	Grade 10
	Victor Wen	Leading Aces Academy	Grade 11
	Jiale Zhao	Earl Haig Secondary School	Grade 11

Each award winner will receive a cash prize between $20 to $100 from OCMC.

Distribution of Scores by Problem

Score	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
10	20	9	7	13	13	16	2	3	0	0
9	0	3	2	2	4	0	0	0	1	0
8	1	1	1	0	1	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0
6	0	1	1	0	0	0	0	4	0	1
5	1	0	0	0	0	0	0	1	0	0
4	1	2	3	0	0	0	0	3	0	2
3	0	1	0	0	0	1	1	0	0	0
2	0	0	7	0	1	0	0	1	0	6
1	0	6	1	0	0	1	0	0	0	0
0	6	6	7	14	10	11	26	17	28	20

Student Ranking

Score	Rank
79	1
66	2
62	3
61	4
59	5
57	6
53	7
50	8
48	10
46	11
43	12
42	13
39	16
37	17
32	18
31	19
29	20
24	23
22	24
20	25
12	26
10	27
0	28