



# Results

Tesseract Mathematics Challenge

2025

## Acknowledgements

---

To all the students who competed in the TMC, even though we had a much lower turnout than usual, we nonetheless hope that you enjoyed the questions and the challenges they provided as much as we enjoyed creating them! We will be bringing you a new and updated spring event in 2026, and we hope that you will like it!

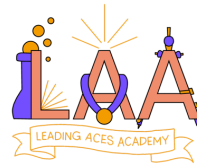
To all of the proctors of the TMC, thank you all for your hard work in administering the contest. We hope our support has been prompt and helpful to you all, and we appreciate the hard work you have put into organizing this event in collaboration with us! We hope to continue collaborating with you all to bring more OCMC events to Ontario high school students.

Finally, we would like to say a huge thank you to the following companies for their generous support: Leading Aces Academy and the Canadian Mathematics Society. Their considerable donations made it possible for us to reach out to more students and make a positive impact on their mathematical learning journeys. Thank you to all our sponsors, and we hope to see them again next year!



Atticus Zhang  
Chief Executive Officer,  
Ontario Competitive Mathematics Committee

Thank you again to our sponsors:



### General Comments:

Overall, this contest was very challenging, and evidently much harder than we intended it to be. Although the first two problems were relatively easy, the difficulty curve was much too steep towards the later half. Despite the difficulty, we hope that the problems were at least somewhat interesting to think about. We would like to thank our problem setters who made this contest possible, as well as all the students and teachers who participated.

**Overall Average Score:** 20.8/50 (Median: 21/50)

### Specific Comments:

**1. Average Score:** 9.5/10 (Median: 10/10)

This problem was very well done, with most students achieving full marks. The only significant mistakes were related to miscounting the number of balls or calculating probability incorrectly in (b).

**2. Average Score:** 7.6/10 (Median: 10/10)

In parts (a) and (b), many students were able to correctly write down the arithmetic sequence equation (in any form) and use it to find solutions. For part (c), we saw multiple approaches being used, but all of them relied on the fact that  $\text{floor}(x)$  is an integer. After that, the correct answer could be extracted using facts about arithmetic sequences.

**3. Average Score:** 3.0/10 (Median: 3/10)

A lot of students made small mistakes on this problem. In part (a), many students recognized that  $n$  had to be divisible by 9. However, some of them missed the number 99 which is a valid solution. The existence of carry-overs was crucial to solving (b), and many students recognized this. Determining the exact number of carry-overs needed was more difficult. A common minor oversight was not considering the possibility that  $n$  could end with 89 or 98.

**4. Average Score:** 0.6/10 (Median: 0/10)

Most students did not attempt this problem. Solving part (a) required the realization that division was needed which is not obvious. Of the few contestants who attempted part (b), most of them noticed that creating a multiple of 3 and a multiple of 8 would be the best strategy. The main difficulty of the problem was realizing how to construct a multiple of 8 using only 2 numbers, a task which no contestant was able to accomplish.

**5. Average Score:** 0.1/10 (Median: 0/10)

This problem was difficult and very few students had time to attempt this problem given the difficulty of Problem 4. Many contestants drew a rough sketch of part (a) but were unable to derive any additional information. Some attempts used length ratios, but this method is less approachable than using angles. Part (b) was an artificial extension of part (a), in that once a student has completed the angle chase in part (a), they should be able to conclude part (b) without much additional insight. Unfortunately, none of the writers attempted part (b).

## Awards, Participation, and Student Ranking

---

### Awards

#### Overall Awards

<b>Champion</b>	Donald Li	Oakville Trafalgar High School	Grade 9
<b>Second</b>	Leo Wu	Bayview Secondary School	Grade 10
<b>Third</b>	Ryan Li	University of Toronto Schools	Grade 10
<b>Forth</b>	Trent Li	St. Robert Catholic High School	Grade 11
<b>Fifth</b>	Jerry Wang	Laurel Heights Secondary School	Grade 11

#### Junior Awards

<b>Champion</b>	Alex Tu	The Woodlands Secondary School	Grade 9
<b>Second</b>	Tony Dong	Laurel Heights Secondary School	Grade 10
<b>Third</b>	Jessica Pu	St. Robert Catholic High School	Grade 10

The Junior Awards are awarded to the highest-scoring students currently in Grade 10 or lower who have not received any overall awards.

Each award winner will receive a cash prize between \$10 to \$30.

### Participation

**Number of schools registered: 8**

**Total number of students participated: 72**

### Student Ranking

Score	Rank	Score	Rank	Score	Rank
35	1	26	14	17	50
34	2	25	16	16	56
32	3	24	19	15	61
31	5	23	22	14	64
30	7	22	33	12	65
29	9	21	37	10	67
28	10	20	41	9	71
27	12	19	49	5	72

**Tesseract Mathematics Challenge 2025  
School Ranking**

Ranking	School	City	Score
1	Bayview Secondary School	Richmond Hill, Ontario	29
2	St. Robert Catholic High School	Markham, Ontario	24
3	Oakville Trafalgar High School	Oakville, Ontario	24
4	Laurel Heights Secondary School	Waterloo, Ontario	22
5	University of Toronto Schools	Toronto, Ontario	21
6	The Woodlands Secondary School	Mississauga, Ontario	21
7	White Oaks Secondary School	Oakville, Ontario	18
8	Dr Norman Bethune Collegiate Institute	Toronto, Ontario	17

N.B. The school score is calculated as the average of all scorers in the school.

**Tesseract Mathematics Challenge 2025  
Student Honour Roll**

Name		Score	School	Grade
Group I				
Donald	Li	35	Oakville Trafalgar High School	9
Leo	Wu	34	Bayview Secondary School	10
Ryan	Li	32	University of Toronto Schools	10
Trent	Li	32	St. Robert Catholic High School	11
Jerry	Wang	31	Laurel Heights Secondary School	11
Group II				
Richard	Zhou	31	Laurel Heights Secondary School	11
Alex	Tu	30	The Woodlands Secondary School	9
Jiahao	Yu	30	Oakville Trafalgar High School	12
Tony	Dong	29	Laurel Heights Secondary School	10
Jessica	Pu	28	St. Robert Catholic High School	10
Gloria	Li	28	Bayview Secondary School	12
Skyler	Yang	27	University of Toronto Schools	7
Lei	He	27	Oakville Trafalgar High School	10
Kevin	Yang	26	St. Robert Catholic High School	11
Avneet	Prakash	26	NA	10