

2026 Samuel Beatty Report
15th European Girls' Mathematical Olympiad (EGMO) in Bordeaux, France
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Introduction & Preparation

The European Girls' Mathematical Olympiad (EGMO) is an annual international mathematics competition for high school girls. The contest is written over two days, where each day consists of a 4.5-hour exam with 3 problems. EGMO 2026 was held from April 9 to April 15 in Bordeaux, France with 260 participants from 67 countries. I had the honour of representing Canada alongside Cora Cong, Riley Jin, and Greta Qu, with Kate Tretiakova as leader and Emily Ma as deputy leader.

To prepare for the competition, Kate and Emily organized online training, where they provided problem sets for us to solve and asked us to grade each other's solutions. It was fun to solve problems from a range of mathematical topics. The training also helped us practice solution-writing and grading according to a rubric.

Arrival

On April 8, our journey began! The six of us met at the Toronto Pearson International Airport for our overnight flight to Paris, with Riley arriving from Calgary and Emily arriving from Boston earlier that day. Our flight was delayed by three hours, but it was nice to know each other better as it was our first time meeting in person as a full team. Upon our arrival at the Paris Charles de Gaulle Airport, we split up to take two separate trains to Bordeaux. On my train, we enjoyed getting to know the Mexican team and playing cards with them. After a four-hour ride, we arrived at the Bordeaux Saint-Jean station. We met our guide, Samuel Mendoza, who is a student in Bordeaux originally from Quebec. We then headed to the Hôtel Mercure Bordeaux – Château Chartrons, where we would be staying for the next week. It was around 9PM and we were fairly tired after a long day of travelling, so we had dinner and headed to bed.

On the next day, we embarked on a treasure hunt in the morning. The goal was to solve puzzles at various landmarks throughout Bordeaux in order to help a fictional professor rob a bank. The city was filled with elegant architecture and had a calm, historic atmosphere. We took a boat across the Garonne River for lunch, where we ate pasta and crêpes and socialized with other teams. My attempt at putting my French knowledge to use by ordering in French was short-lived as the server kindly responded in English instead.



Bordeaux city centre

Later in the afternoon, it was time for the opening ceremony. We dressed up in our team uniforms, marked by our notable Canadian flag headbands, and took the tram to the Palais des Congrès de Bordeaux. The ceremony consisted of speeches, music, a hilarious magic show (where two performers walked across the stage “invisibly” and one performer held his breath underwater for an astonishingly long time), and each team heading onto the stage with their flag and mascots when called. After the ceremony, we took team pictures together and met some of the other teams before heading back to the hotel to get some rest in preparation for the contest.



From left to right: Kate Tretiakova, Riley Jin, Greta Qu, Sophie Zhang, Cora Cong, Emily Ma

Competition Day 1

On the first day of the competition, we ate breakfast at the hotel before heading to the University of Bordeaux, where the exam was to be written. We were let in and split up into separate rooms based on our contestant codes.

The first problem was a combinatorics problem that defined “bordeaux” 2026×2026 boards and “oddly-rectangular” regions on the boards. It asked us to determine a maximum value based on these definitions. I approached the problem by playing around with rectangles of different dimensions, but there turned out to be various ways to prove the bound. Cora and I solved this problem, and Greta earned 4 marks.

Problem 2 was a two-part number theory problem based on the numbers Marie writes on a blackboard following a certain procedure. The problem required us to make observations about the upper bound of the numbers on the blackboard. Greta solved this problem entirely, and I earned 5 points.

Problem 3 was a challenging functional equation which none of us were able to make significant progress on.

After the competition, we ate lunch at the venue and chatted with the other teams. The general consensus was that the first day of the competition was more difficult than usual, but we were excited about the prospect of seeing geometry on the second day of the competition.

In the afternoon, many teams embarked on excursions or participated in organized activities at the hotel. Our team stayed at the hotel and played card games like Hanabi (with questionable adherence to the rules) and SET with girls from Finland and Israel.

Competition Day 2

The first problem of the second day was an algebra problem where we were given a sequence satisfying certain conditions. We needed to prove upper and lower bounds on term number 2026^{2026} . It turned out that only the parity of the term number mattered in this proof, and a nice solution followed involving summing consecutive terms. Greta and I earned full marks on this problem, and Cora and Riley earned points for key progress.

Problem 5 was a complicated geometry problem that asked us to prove two lines are perpendicular. I solved it by noting an important collinearity and two cyclic quadrilaterals. Cora and Greta also earned points for proving essential claims.

Problem 6 was a difficult number theory problem about divisors which none of us made progress on.

The contest was soon over, but there was still plenty of fun in store for us! In the afternoon, the teams went on various excursions again while the leaders, deputies, and observers were hard at work grading and coordinating our papers. Our team watched a marvelous light show called “Matisse, A Symphony of Colors” at the Bassins des Lumières which cycled through the work of artist Henri Matisse. It was incredible to witness the visual displays along the walls and reflecting pools in the dark vast hall.

Afterwards, we headed to a dinner party hosted by Jane Street. There were all kinds of foods and desserts, as well as many board games and puzzles. My teammates and I worked on an around-the-world-themed activity where we solved puzzles at bulletin boards dedicated to each of Jane Street’s headquarters. We also chatted with the Japanese team and created polyhedrons using tiny polygonal pieces.

In the evening, Riley and I played Hanabi with Amelie from Finland to wind down before heading to sleep.

Post-Contest Fun

The day after the competition ended, we took a bus to Saint-Émilion, a nearby village known for its wine and historical architecture.

In the morning, we toured a château vineyard, learning from our tour guide about the history of the family who owns the château and the process of growing grapes to make wine. We also took a look at the wine-making barrels inside. For lunch, Citadel organized food for us and provided a fun photo booth. We chatted with other teams and relaxed, enjoying the nice views from the balcony.

In the afternoon, we walked into the city, which was a small, historic town with beautiful views. Our tour guide took us into underground churches and explained their history, including fascinating myths about

people who had lived there. Afterwards, we visited a souvenir store and dessert store before boarding the bus to return to Bordeaux.

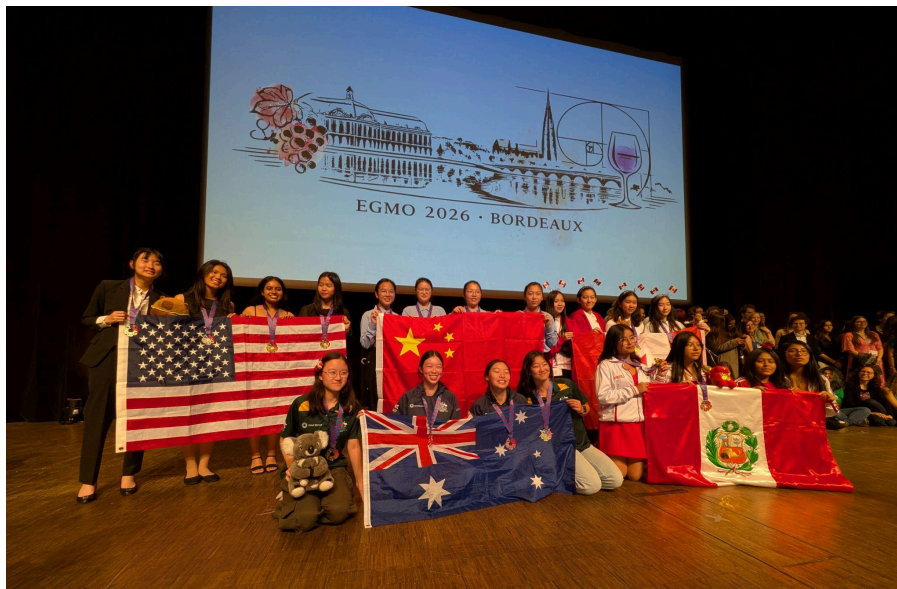


View of Saint-Émilion

After we returned, we reunited with Kate and Emily and discovered that we had many more Canada pins than we originally thought we had, so we found ourselves on a mission to distribute all of the pins to other teams before the end of EGMO. We headed to dinner, where mocktails with funny math-related names were being served. At 8:30PM, our scores were released. Kate and Emily had worked hard reviewing our papers and earning us points throughout the past couple days. Later, Cora and I went to Catherine and Kailua's room to chat with the American team, before joining Amelie and a new friend we met named Rugilė from Lithuania for card games. We talked for a while, learning about each other's countries and reflecting on our time at EGMO.

The next day, our morning excursion brought us to the sand dunes, known as the Dune du Pilat. It was tiring to trek to the top, but the breathtaking views were certainly worth it. We walked around and took photos together before heading back down. The walk down was slightly intimidating as we were afraid of sliding all the way down. We had lunch in a nearby park and bought ice cream before taking the bus back to the hotel.

We then got ready for the closing ceremony. Once we arrived at the venue, we started distributing pins enthusiastically to other teams while also receiving gifts in return. The ceremony consisted of speeches, medal presentations, a video from the EGMO math video contest, music interludes, a flag exchange for next year's host, Croatia, and a video showcasing next year's venue. We were happy to celebrate as a team, having received an Honourable Mention, Silver, and Gold. We also discovered during the speeches that there were 67 teams, 67 memes sent, and an average of 4.5 hours slept per night during EGMO.



Closing ceremony photo with USA, China, Canada, Australia, and Peru

After the ceremony, we took photos as a team and with other teams before heading back to the hotel for a formal dinner. We excitedly joined the dance party, which had a looped conga line. We continued hanging out for a bit in the Americans' hotel room and began packing. I was struggling to stay awake at this late hour but didn't want to sleep for fear of not waking up in time for the train back, so Emily and I chatted for a while until it was time to pack everything up and depart.

At 5AM, Cora, Riley, Greta, Emily, and I headed to the train station (Kate was staying in France for a while longer). We took the train to the Paris airport and slept throughout the ride. At the airport, the line for customs was concerningly long, but we powered through and made it onto the plane just in time. After a long journey, we eventually said goodbye to each other and made it home safely, carrying unforgettable memories from the past week with us.

Acknowledgements

The European Girls' Mathematical Olympiad has been an amazing experience, not only because of the math, but because of the wonderful people I've met from around the world. It has been incredibly inspiring to be surrounded by other girls who are passionate about math and have built such a fun, welcoming community. This journey has left me with meaningful friendships and memories that I will always cherish.

I'd like to thank my teammates, Cora, Riley, and Greta, for being such awesome companions throughout the ups and downs of our journey and for taking part in all sorts of fun shenanigans with me. You have all been so kind and wonderful to experience EGMO with.

I'd like to thank Kate and Emily for their pep talks, advice, support with training, hard work fighting for our points, and inspiration as mentors in mathematics. We could not have made it through without your unwavering support and dedication.

I'd like to thank my friends, family, and teachers for always believing in me and supporting me throughout my journey in mathematics, helping me grow not only as a mathematician but also as a person.

I'd like to thank our guide, Samuel Mendoza, for helping us navigate Bordeaux safely, taking care of all of our logistics throughout the week, and dealing with our less-than-stellar punctuality.

I'd like to thank the EGMO organizers for their tremendous effort in making EGMO 2026 such a well-run and memorable experience for all of us.

I'd like to thank the CMS for providing us with this experience, organizing the entire trip, and working so hard for Canada's math competition community.

Lastly, I'd like to thank the Samuel Beatty Fund for their support and for allowing us to share our love for mathematics. Thank you so much for this incredible opportunity!