

The objects mathematics examines are in an imaginary world and exist only in our mind. And that is where the perfection and beauty of mathematics come from. The idea of building up a new world, a complete theory from a few axioms is that makes it really exciting for me. It needs creativity, intuition and convergent thinking skills. It is a mixture of art and science.

I have always had a keen interest in mathematics. At a young age, I took part in several competitions and during the preparation I got to know harder and more interesting questions than those at school. I preferred challenging problems, when a tricky idea was needed to find the solution. Later on, I was invited to the maths camp of Lajos Pósa, the famous mathematician and teacher. There, I had the opportunity to improve my problem-solving skills and to learn about the questions that captivated mathematicians' society throughout centuries and the most fascinating aspects of the subject. For example, Euclid and Gauss' completely different proof that there are infinitely many primes or Hilbert's program.

My family lives in Kecskemét, a town 80 kms from Budapest, and at the age of 15 I moved to a dormitory in the capital to join the maths-specialized class of Fazekas Mihály Secondary School. This allowed me to have 8 maths classes a week at one of the country's most prestigious secondary schools. My devotion to the subject has not changed since then and I have done additional reading to extend my knowledge in my favourite domains, number theory, geometry and analysis.

In order to get into Fazekas Secondary School, I had to take a written and an oral exam organised by the teachers of the school. The school allowed me to attend study groups, like the so-called Super Study Group, where we could learn about mixed topics, like hyperbolic geometry or point set theory. Also, I have been attending the study group training for the IMO, and last year, I was invited to the winter training camp at Dombóvár, where I could spend a week with the potential IMO members of Hungary and the UK. There, I learnt a lot of new tricks and ideas, e.g. different forms of induction. I could apply these ideas widely in my solutions at maths competitions.

I got second prize in Arany Dániel Competition in 2014 and 1st prize in the International Hungarian Mathematics Competition in 2015. These were individual competitions, but I had the opportunity to try myself in cooperation, too. I took part in Bolyai and Náboj international team competitions (we competed with the students of some Central European countries, such as Germany, the Czech Republic or Slovakia) and our team won both of them. So as to become better at problem solving, I did competition B of KöMaL, the mathematical journal of secondary school students. In the last 3 years, I finished 9th, then 2nd, then 1st in this competition, and my solutions have been published in the journal 3 times. For one year, I taught 12-year-old students who were willing to go to the maths-specialized class of Fazekas. My task was to prepare them for the entrance exam, so we worked on typical (but not easy) problems and methods that can occur at the exam. I got lots of positive experience, it was really interesting to see how their thinking was developing and how they could benefit from the hints we gave them when they were stuck.

I decided to move to Budapest because I had wanted to get the best education possible, it was a challenge for me, and I was curious what I could achieve. The case is similar now. I would like to choose the best place to study and I think that a successful mathematician has to be international; they must speak foreign languages and must understand how others think. Studying at a top UK university would mean an international environment, where all the different experiences and ideas could be shared. As a member of an ambitious team I hope I will be able to contribute to achievements in the field of mathematics.