

Personal Statement

2017, Mathematics, Trinity College

In my view, mathematics is the art of creating, investigating and applying ideas systematically in Cantor's paradise. I feel maths is unique in its purity and clarity: every line of reasoning can be checked by tracing it back to its axioms. I am currently most interested in Number Theory (NT) because imagining complex structures delights me; just like proving Legendre's Formula entails visualizing the prime factorization of the factorials, solving any difficult NT problem requires a deep understanding of the topic.

I first became fascinated by maths in kindergarten, when I enjoyed computing square numbers using a recursive formula I had devised. My real involvement, however, started with my first maths competition in third grade. I became addicted to thinking rapidly and logically, practised as much as I could, and consistently achieved strong results at the national level. Given these successes, I was accepted to the six-year maths programme at the Radnóti Miklós Experimental Grammar School in Szeged. My teachers there encouraged me to participate in various national programmes for talented students, including weekend and summer maths camps, and International Mathematical Olympiad (IMO) training workshops and camps. I thus discovered a highly supportive community of maths teachers and students and ventured into areas of maths I had never encountered before, such as Analytic Number Theory and p -adic numbers.

I have attended numerous events which have enabled me to meet my peers in person and see how they approach problems and improve their thinking. These include the Hungarian IMO training sessions in Budapest, the annual joint UK–Hungary IMO Training Camp, and, most recently, the Mathematical Olympiad Summer Program (MOSP, a training camp for 70 top US students, including the US IMO team, at Carnegie Mellon University). Finally, the EuroSPARC camp in Oxford, which focused on rational thinking, helped me deepen my understanding of pragmatics and cognition.

My achievements in maths include placing 1st in Hungary's highly competitive Arany Dániel competition in 2015 and 2nd at the 2016 national maths competition (OKTV), as well as winning 1st place three times in the IMO-level KöMaL correspondence contest. In 9th grade, I started participating in the USA Mathematical Talent Search, winning a gold prize in three consecutive years; in 2016, I made the Distinguished Honor Roll of the American Mathematics Competition (AMC 12A) and qualified for MOSP. At the 2014 Middle European Mathematical Olympiad, I achieved a perfect score. I was then given the opportunity to compete at the IMO, where I won bronze and silver medals in the two years that followed. In Rio next year, I am aiming for gold.

Not only do I hope to master NT, but I am also keen to see the underlying explanation for any phenomenon, be it social norms, photosynthesis or the grammar of a language. With the support of my school, which places a strong emphasis on educating students to become well-rounded individuals, I have also had success at national competitions in French, physics and

chemistry. In my free time, I have taken French and German classes, as well as piano and swimming. I have also been keeping abreast of both national and international affairs and have been particularly engaged in delivering donations to refugees stranded in southern Hungary and demonstrating against inequitable government policies, such as those targeting education.

In addition, I am passionate about spreading my joy for maths however I can, whether by organizing maths workshops for younger students or contributing to the Art of Problem Solving forum and other websites. I hope this has also come through in television and newspaper interviews I have had the chance to do, including for *The New York Times* and *The Guardian*.

The international experiences I have had have sparked my desire to study at an outstanding institution with inspiring students from around the world. With the personal attention of the UK tutorial system and immersed in a network of brilliant minds, I hope eventually to do my part in bringing the structure and rationality of Cantor's paradise to fruition in the everyday world.