

## 2020, Mathematics, Magdalene College

I am in my final year in a class specialized in mathematics at Radnoti Miklos Grammar School. Besides having very good results in all my subjects, I consider studying mathematics and solving problems the most significant part of my studies. I have known for a few years that I would like to work as a mathematician or in an area very close to it. I have been interested in mathematics since I started primary school. When I first entered a competition in year 2, I discovered that there are a lot of interesting questions not contained in the curriculum. I started going to competitions regularly in year 3. At the age of 13 I began my studies at my current school, and since then I have participated in many mathematical camps during both the summer holidays and school terms. Besides maths, I find physics interesting, too. I have seven maths classes a week, where I acquire the most important techniques and learn lots of theorems and proofs. In the past five years I have been attending the summer camp organized for the best contestants of the national competitions. I take part in the biweekly IMO training session held in Budapest, and in the past two years I got invited to the winter camp of the British and Hungarian potential participants of the Olympiads and to the Hungarian summer camp before the IMO. I think that solving problems regularly and writing down their solutions appropriately is the most efficient way of preparing for competitions, therefore I regard my participation in the contests of the Mathematical and Physical Journal for High Schools (KoMaL) as an essential factor contributing to my achievements. In each of the last three years I won the B-level competition, and last year I took the 2nd place in the A-level competition. During my first four years at Secondary School I won the national competition of my age twice and reached second place twice. In year 10 I qualified for the Middle-European Mathematical Olympiad, where I won a gold medal and the Hungarian team was 3rd. Last year I took 6th place at the National Mathematics Olympiad, the most important national competition for 11th and 12th graders, and won 2nd prize in a national team competition. I participated in the Romanian Masters of Mathematics competition where I was awarded a bronze medal. Also in year 11, I qualified for the MEMO and received a gold medal in the individual competition again, while in the team competition we came 2nd. I have taken part in several national physics competitions during my years at secondary school and I got into the final each time. My favourite fields in mathematics are number theory and elementary geometry, and I also like inequalities and graph theory very much. I have been inventing problems of my own for a few years, most of which are in geometry. One of these was published in KoMaL last year. I frequently try to solve problems of my own in number theory, too, but the proof of a seemingly easy conjecture often turns out to be very difficult. I like mathematical problems inspired by physics, too, and I enjoy applying calculus in the proofs. I like music and sports, too. I sang in a choir for five years and I tried two musical instruments: I played the recorder during primary school, then the piano for four years. I learned folk dance for six years and currently I play badminton. I used to participate in competitions, too: I took 3rd place in a regional badminton competition and qualified for the national final when I was 14. I like working in a team in different activities, including dance choreographies, maths competitions and camps. I have been considering studying abroad for several years, because I would like to study at an institution where there are a lot of students interested and talented in mathematics from all over the world. The supervision system and the opportunity to join a community consisting of the best students and academics convinced me that the University of Cambridge is the most suitable choice for me.

