

Q1. Why do you want to study this course or subject?

This is your opportunity to showcase your passion and knowledge of your chosen subject area and to demonstrate to universities and colleges why they are a good fit for you and your future ambitions.

In my opinion, geometry shows the elegant side of mathematics the most, which feels closer to art than science. What led my attention to more exotic areas of geometry was 'The Shape of Space' by J.R. Weeks that was recommended after a topology-themed math camp. Inspired by the book 'Non-Euclidean Geometry' by H.S.M. Coxeter, I wanted to start my own research project. I worked on hyperbolic geometry problems I encountered in books, wondering if there was a simpler solution. Using the Poincaré model, I developed a method that uses only elementary tools to solve problems like dividing a line segment into n equal parts in the hyperbolic plane and constructing all the triangles with an angle sum less than 180 degrees.

To share my findings, I presented my proofs and won the first place at the Budapest Technical University's Student Science Competition and second place in Polygon journal's competition. My professors encouraged me to publish my work. I wrote an article titled "Constructions of the Poincaré-disc," which was published in Acta Mathematica Hungarica (Springer), making me the first secondary school student publishing in the journal. The referee called it a valuable contribution to the literature, which motivated me further. I am now working on "squaring the circle" in the hyperbolic plane, believing there is a beautiful, yet unknown proof.

I would like to continue this journey during and after university studies, performing research to discover great proofs, and new viewpoints. I have been studying at Fazekas Mihály Gimnázium in Budapest since third grade and joined the special mathematics class in seventh grade. It is a great joy to learn in a community where others share the same interest. Our teachers believe in "teaching through exploration": instead of receiving ready-made proofs, we are encouraged to discover ideas ourselves. This helps to develop the habit of asking our own questions.

Q2. How have your qualifications and studies helped you to prepare for this course or subject?

This is your chance to shout about the relevant or transferable skills you've gained from your education and highlight your understanding of how they will help you succeed in this subject area.

I have been competing in national mathematics contests since third grade, earning first place around ten times. Recently, I placed 10th in the National Mathematical Olympiad and came first in the International Hungarian Mathematical Olympiad, where I was the only participant to achieve a perfect score.

I have also tried teaching: I prepared sixth graders for a year for joining the math class and worked for two years with a talented student one-on-one. I also studied with a mentor every weekend for six years, and now I am a mentee in the Project Access program. While preparing for the STEP exam, I taught myself topics not in the Hungarian curriculum, and after I got interested in calculus, I read Calculus for the Ambitious to deepen my knowledge.

Q3. What else have you done to prepare outside of education, and why are these experiences useful?

This is your chance to reflect on any other activities you have undertaken outside of your education, or personal experiences which further demonstrate your suitability for the course. This section is likely to be deeply personal to you, so anything you include should be meaningful and relevant to you.

In Hungary, there are many opportunities to engage in mathematics outside school. Since eighth grade, I have attended 3 summer camps and 8-9 weekend camps annually. These include IMO and EGMO preparation camps, where I learned techniques like Vieta-jumping and projective geometry. The friendly atmosphere helped reduce stress and kept me calm during competitions. I also joined the camps of Lajos Pósa, which focus on mathematical thinking rather than competition. We usually explore problems in areas like group theory and combinatorics.

I was invited to international camps too: an Italian EGMO camp, the UK-Hungarian Winter Camp, and Math Beyond Limits (MBL) in Poland, where I studied for example complex analysis and finite fields. What I value the most in international camps is the chance to think alongside people from diverse backgrounds. Hearing different approaches expanded my mathematical thinking and inspired me to apply to a UK university, where I hope to see problems from multiple perspectives.

Besides maths, I am passionate about linguistics. I earned second place nationally and an honourable mention at the International Linguistics Olympiad, and a bronze medal at the Asia Pacific Linguistics Olympiad (as a guest). For me, linguistics is like math with words, it strengthens my thinking in a relaxing way.

My Cambridge Application

- *highlight what interested you in the course you're applying to*
- *explain why you want to study a particular Cambridge course if you're applying to a course that is only offered at Cambridge*
- *tell us about the ways you're exploring your subject interests (if you haven't been able to cover this fully in your UCAS personal statement)*

I first visited Cambridge last year to meet some of my friends studying there, and the experience left a deep impression on me. I learned about the supervision system, the way classes and societies work, and I immediately felt that Cambridge is full of possibilities. The atmosphere was unlike anything I had seen in Hungary — inspiring, open, and full of intellectual energy.

What attracts me most is the supervision system. I appreciate how it provides continuous guidance throughout the year and encourages steady progress through positive feedback. I also like that it creates space for independent thinking: if questions arise, there is always someone to ask, which makes learning less confusing and more personal. Working on problems in this calm and supportive environment sounds both motivating and less stressful.

CUHS PS Example
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Beyond mathematics, I am also passionate about different forms of dance. I would love to balance my academic life with an active hobby, as I believe the mind works best when the body is equally engaged.