

Some Advice on Olympiad Competitions



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Many people seem to be scared of the word 'Olympiad', thinking that they are extreme mathematics that require so much ingenuity and cleverness in problem-solving. However, I would like to emphasise problem-solving, like most other skills such as essay writing or fluency in a language, requires learning, patience and practice. Nobody is born being able to do high level maths, just as nobody is born with fluency in a language. One may ask, why bother taking part in difficult and time-consuming Olympiad maths competitions? I would say because of all the skills you could gain and challenges you could overcome through this self-directed journey, from developing a logical and creative mindset to virtues of resilience, patience and perseverance. These are all transferrable skills that have helped me throughout my GCSE and A level studies, in subjects beyond mathematics and other aspects such as time management and work ethic.

Taking my recent BMO2 competition as an example, I have actually spent three hours working on the first question before getting to the solution. During the first 1.5 hours, I was completely on the wrong track. I kept trying to look for a logical series of numbers that would always work and it proved to be an impossible task. At the verge of giving up, I decided to change tactics. In the next half hour, I experimented with all the various ideas that I thought could work and wrote down everything that came to mind. Finally, a bit after the second hour, I came to an enlightenment through one of my earlier scribbles that I dismissed. After spending the next half hour carefully explaining my chain of reasoning and thought process, I produced 2.5 pages of one neat solution... plus ten extra pages of all my rough working and experimentation. What I want to highlight from this experience is that behind each success and achievement, there are a million failed attempts and failures in its shadow. No one is able to instantly get a solution to a problem, and even when they do, it is most likely because they have gathered tons of experience and failures in the past.

Some advice for younger pupils:

Olympiad problems are supposed to be hard. They are purposefully designed to challenge you to think out of the box and develop your logic and creativity. No matter which year you are in, your dive into the Olympiad arena is going to be tough. A big step up from the A level or GCSE styled questions, they are going to feel incredibly hard and near impossible at first glance. However, overcoming the initial obstacle of unfamiliarity, the immense sense of satisfaction from solving an Olympiad problem is unparalleled.

For those in the Fifth Form or above, I would strongly recommend taking part in the Mathematics Olympiad for Girls. This is an entry level Olympiad competition that is much accessible to girls who have little or no previous exposure to Olympiad style questions.

For those interested mathematicians in the Sixth Form, I would recommend taking part in the BMO I, even if you don't qualify for it through SMC. Despite achieving a Merit in BMO2, I did not actually qualify for BMO2 through BMO I. Similarly, despite achieving a Distinction in BMO I,

I did not actually qualify for BMO I through SMC. Please do not be discouraged at all by one underperformance. No single competition or exam could be a reliable measure of your ability and expertise in any given area, no matter if it is sports, music or mathematics.

For those aspiring mathematicians in the Sixth Form, especially those thinking of STEM subjects at university, I would also recommend working on some of the PROMYS questions and STEP papers. Probably the most difficult problems you would encounter in secondary school, every single one of them is carefully crafted to introduce you to a new direction of thinking and challenge your creativity and instincts.

Please do not think that you are ever not ready for the challenge. The process of thinking and attempts of solving often matters more than the final answer in mathematics. Just sparing the time to contemplate about a problem can be so insightful, even if you do not reach the final solution in the end. Think of Olympiad problems as sudoku puzzles or jigsaw puzzles you play with when you are younger, except that this time there are no explicit instructions on what to do. It is the process that makes it enjoyable and worthwhile, and not necessarily always the end product.