



Advanced Mathematics
Support Programme®



Year 13 Regular Problem Solving Classes

Online

4th November 2021

Overview

A series of maths problem solving classes designed to develop students' problem solving skills so they have the confidence to apply for universities that include an admissions test as part of their offer.

These regular classes offer students the opportunity to develop their problem-solving skills by trying out challenging problems that require deep mathematical thinking, and so help them meet the challenges they may face in embarking on a maths-rich university course or career. The problems are fun and rewarding and attending the sessions will enrich a student's mathematical experience.

Students will look at problems from a range of sources including Sixth Term Examination Papers (STEP) used by Cambridge and Warwick Universities and the Mathematics Admissions Test (MAT) used by Oxford University and Imperial College, London.

Aims

- To develop confidence in dealing with maths problems
- To develop students' resilience when attempting maths problems
- To provide information about the problem solving skills required in university admissions tests
- To give students the opportunity to attempt problems both in groups and on their own
- To give students the opportunity to think about how solutions to problems are presented
- To provide students with the opportunity to explore areas of maths not in the standard curriculum
- To provide students with the opportunity to study questions from the STEP and the MAT examinations.

Who will benefit from attending?

The classes are suitable for any A level Mathematics student with an enquiring mind who wish to develop their problem solving ability at A level and beyond.

They are particularly suitable for those students who are required to sit an admissions test as part of a university offer.

Content

Students attending the classes will encounter problems covering a variety of topics. These include:

- Working with integers
- Reasoning and logic
- Sequences and series
- Induction
- Curve sketching and identification
- Coordinate geometry
- Vectors
- Trigonometry
- Complex numbers
- Integration
- Differential equations

Materials and Equipment

If the classes are being held online, you will need access to suitable equipment. You are advised to use a headset or headphones with an inline microphone to provide the best sound quality and to prevent audio issues for other users. A laptop with a built-in webcam and microphone may be sufficient if you're in a quiet area but please take the time to check this before the session. BBB is designed to be used on a variety of platforms but you will get the best experience via a desktop or laptop computer, running either Google Chrome or Mozilla Firefox as the browser.

Note: Internet Explorer and Edge are not suitable currently.

Access to GeoGebra or desmos will also be useful.

Study Schedule

This is a series of problem solving events aimed at Year 13 students, particularly those considering applying to study mathematics, or a related field, at university. The events will be useful for those preparing for academic interviews and for those intending to sit the STEP papers in summer 2022 but would also be of interest to those who simply enjoy problem solving. Each session will focus on a different mathematical topic and students will be expected to attend the majority of sessions. The programme will include access to problems that may be tackled alongside the sessions. Some problems will be allocated as follow up or preparation for online sessions.

- 1) Thursday 4th November
- 2) Thursday 18th November
- 3) Thursday 2nd December
- 4) Thursday 6th January
- 5) Thursday 20th January
- 6) Thursday 3rd February
- 7) Thursday 24th February
- 8) Thursday 10th March
- 9) Thursday 24th March
- 10) Thursday 21st April
- 11) Thursday 5th May
- 12) Thursday 19th May

Key Facts

Event ref:	#8789
Audience:	Students
Target year:	Year 13
Curriculum focus:	University admissions tests, A level Mathematics, A level Further Mathematics
Mathematical focus:	Pure, Problem solving
Event format:	Student course
Event length:	20 hours
Region:	East of England
Venue:	Online- Cambridgeshire, Bedfordshire
Next session:	Thu 19th May 2022
Course times:	16:30 - 17:45

Registration

For more information, or to register for this event, please visit <https://amsp.org.uk/events/details/8789>