# Maths Problem-Solving Sessions for Sixth Formers at Surrey or Sussex University

**Year 12 and 13 students are invited to a series of maths problem-solving sessions taking place fortnightly from 4th November 2017 to 24th March 2018 at Sussex University 09:30 – 12:30. Dates in Surrey to be confirmed**

These sessions offer AS and A level Mathematics students the opportunity to develop their problem-solving skills by trying out challenging problems that require deep mathematical thinking, and so help them achieve the grades they need to get into the university or career of their choice.



The problems students will tackle are fun and rewarding. Attending the sessions will enrich students' mathematical experience.
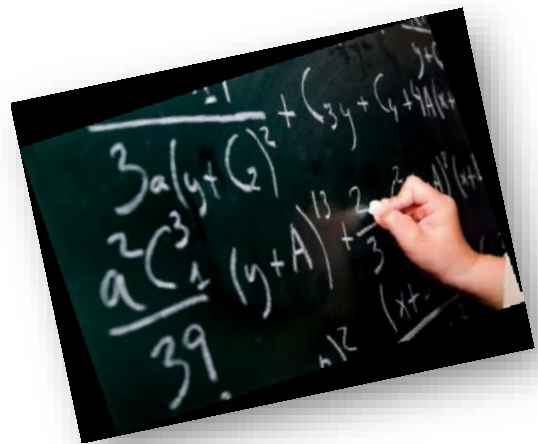
These sessions are not designed to prepare students for the Sixth Term Examination Papers (STEP) or Advanced Extension Award (AEA), although they would be useful practice towards these exams. They are for anyone who is studying A-level mathematics and who enjoys solving challenging problems.

The series of sessions costs £40 for those attending for the first time or £20 for returning students from state-funded schools. Students from Independent schools/colleges will be charged £100. Refreshments will be provided at each session.

**WHO?** Year 12 & 13 students who enjoy maths and solving problems.

**WHEN?** 09:30 – 12:30 on Saturday mornings

**WHERE?** University of Sussex (Surrey venue still to be confirmed)

## Some problems for you and your students to try!

These are reproduced with the permission of the United Kingdom Mathematics Trust http://www.ukmt.org.uk/ and feature in "A Problem Solver's Handbook" by Andrew Jobbings. All students attending the sessions will receive a free copy of this book.

The diagram shows a square ABCD and an equilateral triangle ABE. The point F lies on BC so that EC = EF. Calculate the angle FEB.



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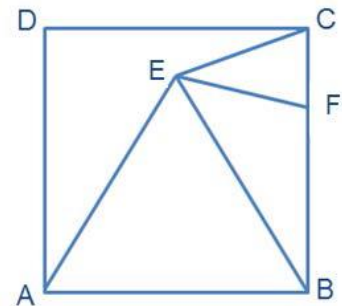
A particular four-digit number N is such that

a) the sum of N and 74 is a square; and

b) the difference between N and 15 is also a square.

What is the number N?

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Sam wishes to place all the numbers from 1 to 10 in the circles, one to each circle, so that each line of three circles has the same total. Prove that Sam's task is impossible.