Maths Problem-Solving Sessions for Sixth Formers at Keele University

Year 12 and Year 13 students are invited to join a series of maths problem-solving sessions taking place on Thursdays from 4.30pm – 6.30pm at Keele University from November 2017.

The sessions offer 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 their choice.

The problems students will tackle are fun and rewarding. Attending the sessions will enrich students' mathematical experience.

Students will look at problems from a range of sources including Sixth Term Examination Papers, Advanced Extension Award and Oxford Maths Admissions Test and the Test of Mathematics for University Admission.

The sessions are not just for students who intend to sit any of these exams or even just for those planning to study maths at university. They are for anyone who is studying A-level mathematics and who enjoys solving challenging problems.

Sessions will take place in university teaching rooms, led and supported by an FMSP Associate.

The series of sessions will be FREE. Students will be offered refreshment after each session and a problem-solving book.

WHO? Year 12 and Year 13 students who enjoy maths.

WHEN? Most Thursdays in term time at 4.30 pm.

Sessions start on **Thursday 2 November 2017**. It is intended that the course will last for 15 sessions (or thereabouts) and so the course will finish before Easter 2018.

WHERE? Keele University, Colin Reeves Building, CR114.

If you have any questions then please e-mail Richard Stakes:

r.stakes@keele.ac.uk

To book places for your students, please go to:

http://bit.ly/keeleproblemsolving2017

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.
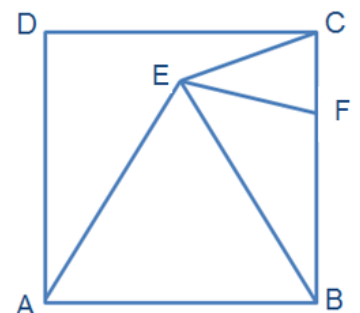
A particular four-digit number N is such that

  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?

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.