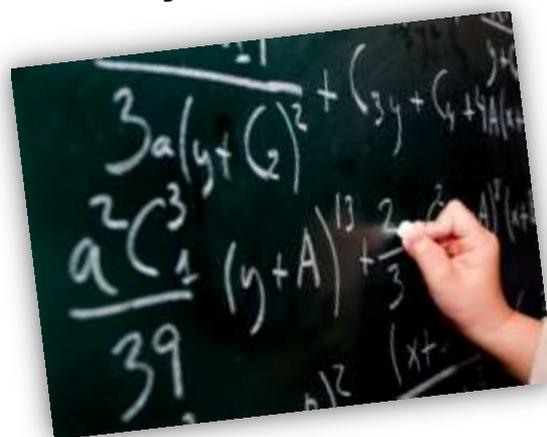


# University of York Maths Problem-Solving Classes for Sixth Formers

**Year 12 and Year 13 students are invited to the new Maths Problem-Solving classes taking place on Wednesdays from 4.00 – 6.00pm at University of York.**

The clubs offers students the opportunity to develop their mathematical talents by trying out challenging problems that require deep mathematical thinking, under the supervision of university mathematics staff.



Included in the first half-term's activities will be:

- for Y13 students, a mock interview (of the kind conducted by top university departments), together with help and advice for this
- for Y12 students, some support with University Applications.



Students will look at problems from a range of sources, with Year 13 students concentrating especially on Sixth Term Examination Papers, Advanced Extension Awards and Oxford Maths Admission Test papers. However, the club is intended not only for those pursuing these qualifications, but for all who want to push their study of maths beyond routine A level problems.

Sessions will last for two hours with a short break for refreshments in the middle.

**Refreshments will be provided during the break and all students will receive a problem-solving book.**

**WHO?** For talented Y12 and Y13 A-level Maths students who relish a challenge and hope to study Mathematical subjects at university.

**WHEN?** Wednesdays at 4-6pm. Fortnightly during term time. Sessions start on 2<sup>nd</sup> November 2016 until April 2017.

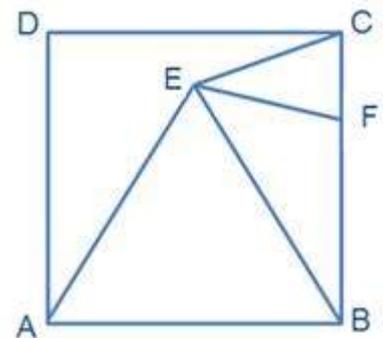
**WHERE?** James College Nucleus at Heslington(West) Campus, University of York.

If you have any questions or want to register students for the classes then please e-mail [jeansmith@furthermaths.org.uk](mailto:jeansmith@furthermaths.org.uk) or call 07789088475

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

These are reproduced with the permission of the United Kingdom Mathematics Trust and feature in “A problem solver’s handbook” by Andrew Jobbings. All students attending the club 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 circles, one to each circle, so that each line of three circles has the same total. Prove that Sam’s task is impossible.

