News

Welcome back to another year of maths at Camp Hill. Our GCSE results were good, all of our new students seem to be settling in well, and it's already the third week of term. We have three new teachers in the maths department this year; Mrs Bennett, Dr Taylor and Mr Hamblett. We hope you will make them all feel welcome at Camp Hill. Meanwhile, what do you think of the picture of the poodle whose hair has been cut so that his head is shaped like a cube? If you have a poodle at home, why not try this? Make sure you ask your parents' permission first though.[1]

Birmingham Lectures

Last week was the first of the public maths lectures that take place at the University of Birmingham throughout the year. The next one is on Wednesday 18th October and it has the interesting title "Did Galois deserve to be shot?" This refers to the famous mathematician Évariste Galois who was killed in a duel in 1832. We have no idea whether he deserved it, but we'll find out in a few weeks' time.

Mrs Palmer's Puzzle

Here is a puzzle sent in by Mrs Palmer.[2] Set A, B, C, D and E equal to five different whole numbers, so that

$$A + B = C + D + E$$

but also

$$A^2 + B^2 = C^2 + D^2 + E^2$$

We think we have found a unique solution to this puzzle, where each of the letters stands for a single-digit number. Can you find it?

Joke

Who was it who decided that this would be a sensible idea?

Square box. Round pizza. Triangle slices.

Another Puzzle

$$1 + 2 + 34 - 5 + 67 - 8 + 9 = 100$$

Can you find another way to make the digits from 1 to 9 in order add up to 100 that uses fewer than six + and − signs?

1. Camp Hill Girls maths department cannot be held responsible for any problems caused by attempting to cut a poodle's hair into an interesting geometrical shape.
2. If you are new to Camp Hill, Mrs Palmer retired last summer after teaching maths here for 17 years. We're hoping that 'Mrs Palmer's Puzzle' might become a regular feature of the maths newsletter.

Cipher Challenge

The University of Southampton have launched their new Cipher Challenge. This year's competition sounds like it should be good. Sign up now on their website if you want to take part.[3]
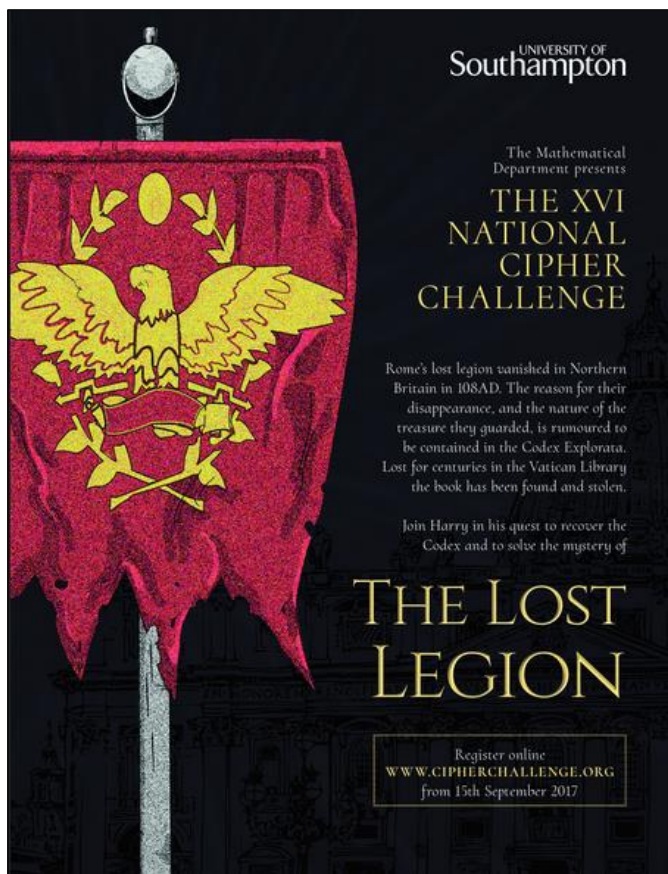
Maths Quote

"Some people are always critical of vague statements. I tend rather to be critical of precise statements; they are the only ones which can correctly be labelled 'wrong'."

Raymond Smullyan

If you have been having some of your worked marked wrong lately, and would like some extra help, why not come along to maths workshop? This is an informal drop-in session that takes place every Monday lunchtime in room 13. Everyone is welcome ☺

Maths Challenges

The Senior Maths Challenge will take place on Tuesday 7th November. This is designed mainly for students in years 12 and 13, but we do also enter people from lower years if we think they will do well.

Here are four questions from last year's paper.

**1.** What is the smallest square that has 2016 as a factor?

A 42^2 **B** 84^2 **C** 168^2 **D** 336^2 **E** 2016^2

2. Aaron has to choose a three-digit code for his bike lock. The digits can be chosen from 1 to 9. To help him remember them, Aaron chooses three different digits in increasing order, for example 278. How many such codes can be chosen?

A 779 **B** 504 **C** 168 **D** 84 **E** 9

3. The circumference of a circle with radius 1 is divided into four equal arcs. Two of the arcs are 'turned over' as shown. What is the area of the shaded region?

A 1 **B** $\sqrt{2}$ **C** $\frac{\pi}{2}$
D $\sqrt{3}$ **E** 2
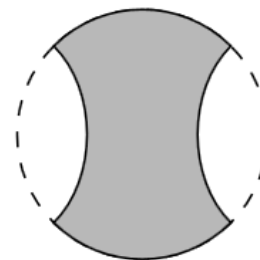
4. Let n be the smallest integer for which $7n$ has 2016 digits.
What is the units digit of n?

A 0 **B** 1 **C** 4 **D** 6 **E** 8

3. Last year Eleanor Barrell and Emma Hillier (now in year 11) came 41st in the country, beating every team in the boys' school, which was a very good result for us. Hopefully, this year we will do even better. You can sign up now at https://www.cipherchallenge.org/register/