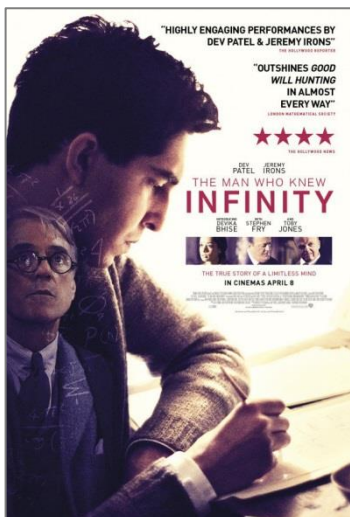**In a 3 by 3 magic square, every row and column adds up to 15**
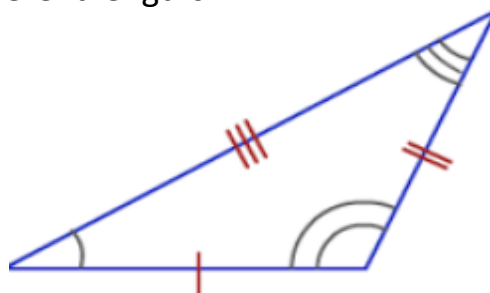
News

On 8th April, a new film about the mathematicians G.H. Hardy and Srinivasa Ramanujan called *The Man Who Knew Infinity* was released in the UK.[1]

It's had quite good reviews but has been criticised a bit for not having much maths in it. None of us have seen it yet but if any of you have, please let us know what you thought of it. On Thursday 28th April it's the UKMT Junior Maths Challenge, so if you're in year 7 or 8 and want to be chosen to represent Camp Hill in next year's team competitions, this is your chance to show us how good you are at solving maths puzzles.

Maths Quote

"An equation means nothing to me unless it expresses a thought of God."
Srinivasa Ramanujan

If, however, equations never really mean anything to you, perhaps you should come along to maths workshop (particularly with the end of year exams approaching in a few weeks' time). Come and get help, or just sit and revise, any Friday lunchtime in room 13 ☺

Maths Word

A triangle is 'scalene' if all of its sides are different lengths.

The word comes from the Greek *skalēnos* meaning 'unequal'.

Surprising News

Mathematicians all over the world were shocked on 1st April to discover that, contrary to popular belief, 1 and 2 are actually the same number. Here is a simple proof. If we start with two numbers, a and b, which are equal,

we can say that

$$a = b$$
$$a^2 = ab$$
$$a^2 - b^2 = ab - b^2$$
$$(a+b)(a-b) = b(a-b)$$
$$a + b = b$$
$$b + b = b$$
$$1 + 1 = 1$$

which means that

$$2 = 1$$

Fortunately this turned out to be an April Fool's joke, but can you spot the mistake in the reasoning?

1. We're thinking perhaps the year 9 scheme of work might be a good place for this film.

Narcissistic Numbers

A narcissistic number is a number that is the sum of its own digits each raised to the power of the number of digits. For example:

$$153 = 1^3 + 5^3 + 3^3$$
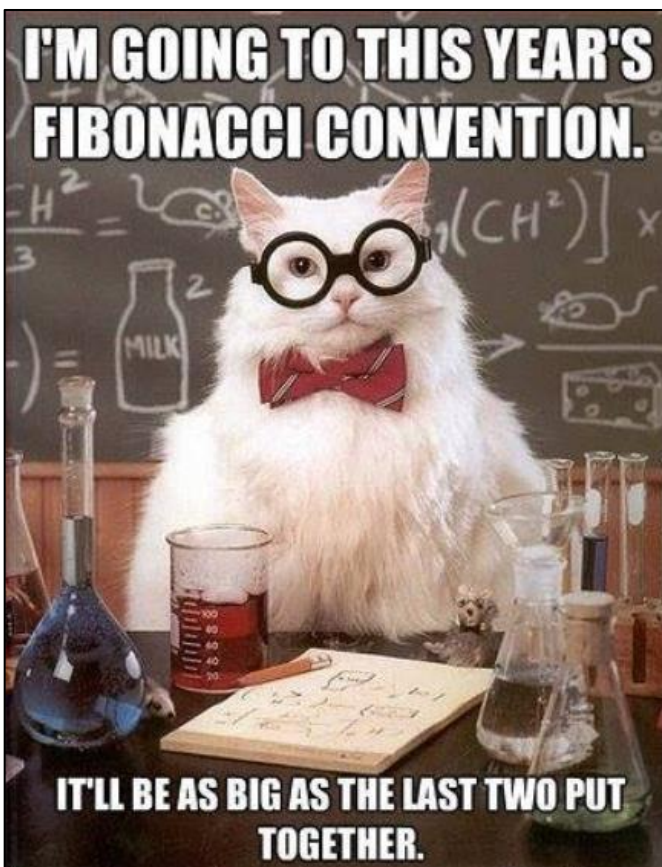
$$370 = 3^3 + 7^3 + 0^3$$

$$371 = 3^3 + 7^3 + 1^3$$

$$407 = 4^3 + 0^3 + 7^3$$

There are only 88 narcissistic numbers in base 10, of which the largest is the 39 digit number

115,132,219,018,763,992,565,095,597, 973,971,522,401

Joke

I'M GOING TO THIS YEAR'S FIBONACCI CONVENTION.

IT'LL BE AS BIG AS THE LAST TWO PUT TOGETHER.

Famous Mathematician

Kurt Gödel was one of the most interesting mathematicians of the 20th century. Born in Austria in 1906, he specialised in mathematical logic and is generally considered to be the best logician who ever lived. By his early 20s he had read the whole of Bertrand Russell's huge book 'Principia Mathematica' and was convinced that there was a problem with it. In 1931 he published his famous 'Incompleteness Theorems' which proved that, in any mathematical system that builds up theorems by deducing them from an initial collection of 'obvious' statements (called 'axioms'), there will always be true statements that are impossible to prove. He did this by using maths to formulate a paradox similar to the sentence "This sentence is not true". He moved to America in the 1930s, to get away from Hitler, where he met Albert Einstein, who became his best friend. Einstein accepted a job at the Institute for Advanced Study at Princeton "to have the privilege to be able to walk home with Gödel". By 1949, Gödel had produced a remarkable proof: *In any universe described by the Theory of Relativity, time cannot exist*. He also produced a logical proof for the existence of God. So if anybody ever asks you why you like maths, perhaps you could start by telling them about Kurt Gödel.
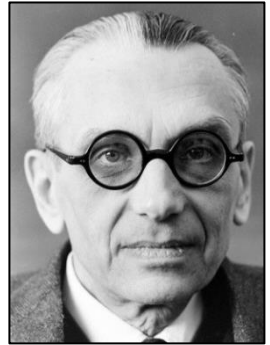
The Next Newsletter

If you have anything mathematical to go into the next newsletter, please tell your maths teacher.