



$$1! + 2! + 3! + 4! = 33$$

News

In a barn, 100 chicks sit peacefully in a circle. Suddenly, each chick randomly pecks the chick immediately to its left or right. How many chicks should we expect to not get pecked?



Earlier this month, a 13-year-old boy from Texas won a maths competition by answering this probability question in less than 1 second. Can you solve it?¹

Did you know?

In 2016, Barack Obama was the 44th president of the USA.² Because the square root of 2016 is 44.89988864 Obama is known, to some people, as the 'square root president'. It is unlikely that any future president will share this mathematical property with him. You may be thinking that that doesn't really work, because 44.89988864 actually rounds to 45, and not 44. This is not actually a problem because we haven't rounded the number 44.89988864 to get 44; we've truncated it. If you're wondering why it's been truncated instead of rounded, that's because if we'd rounded it, the fun mathematical president thing wouldn't work! Stop trying to spoil the fun!



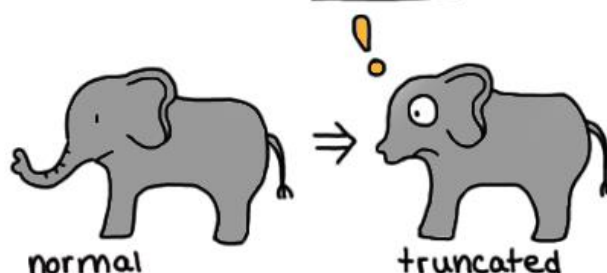
Edge Hill Competition

The entries for the second round of the Edge Hill University competition have all been sent off. Hopefully we'll hear back from them soon.

Maths Word

To **truncate** something in maths means to shorten something by cutting off the top or the end of it.

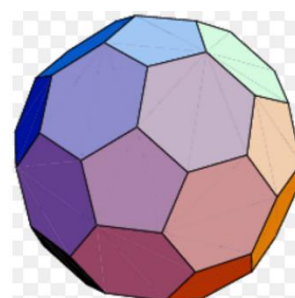
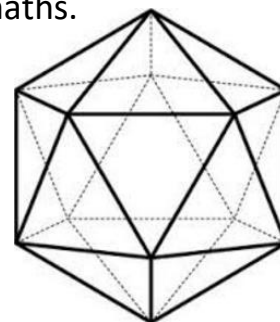
The elephant looks ridiculous if its trunk is truncated.



A decimal can be truncated, which is different to rounding. For example, a rounded version of π , which starts 3.14159265, could be 3.1416, whereas a truncated version would be 3.1415.

It's not only numbers that can be truncated though in maths.

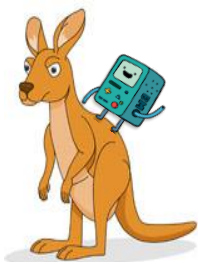
An icosahedron is a mathematical solid known as a **platonic solid** because each of its faces is the same regular polygon; in this case they are all equilateral triangles. Try to imagine what the shape would look like if you sliced off each of the points. What you would get is called a truncated icosahedron, made up of 12 hexagons and 20 pentagons. A lot of footballs are made this shape because they are a bit like a sphere when they are pumped up.



1. Take as long as you like. The answer is on the back of this sheet at the bottom. Can you work out why it is correct?
2. I know, he still is the 44th president of the USA, but in 2016, he was still president. You know what I mean.

Maths Challenge Results

Since the last newsletter, we've had the results of the Junior Maths Challenge. Well done to Kiera Fernandes in 7X, who has qualified for the Junior Maths Olympiad. Qualifiers for the Kangaroo from year 7 are Aahana Jain, Abigail Cherry and Tianran Ge. From year 8, the qualifiers are Naina Gupta, Dhanyata Narendra, Aamina Rizvi, Lauren Lownes, Mushkan Pradhan, Daya Talwar and Nicole Soo. Good luck to them on Tuesday 13th June.



MENSA Puzzle

Each letter from A to H is worth one of these eight numbers, and no two letters have the same value.

2 4 6 7 8 14 15 21

Determine which letters go with which numbers if

B + D = A, E + H = G, D + F = B,
A + E = C, and B + C = G

Joke

If at first you
 DON'T Succeed
 try TWO MORE TIMES
 So that your
FAILURE
 is
 Statistically Significant

Twisteddoodles.com

The answer to the chicks puzzle is 25.

Code Breaking

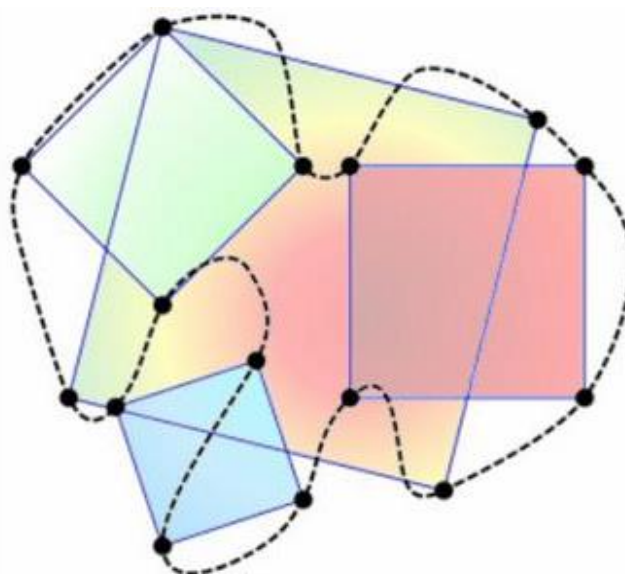
Southampton University have announced another code breaking competition, to take place between the 10th and 13th July. According to the poster, that's far too small to read here, it's a four day competition, where students will be awarded points based on the speed and accuracy of their answers. Teams



need to register on the website by Friday 30th June. Have a look at the big version of the poster on the competitions notice board in the maths corridor.

Curves and Squares

According to an interesting mathematical theorem, if you draw any closed curve (which means any curvy line that joins back up to its starting point), somewhere on that curve you will be able to find the four corners of a square.



If you're bored, why not doodle a closed curve on a piece of paper and see if you can find the square?