49 is the only two-digit square number whose digits are both square
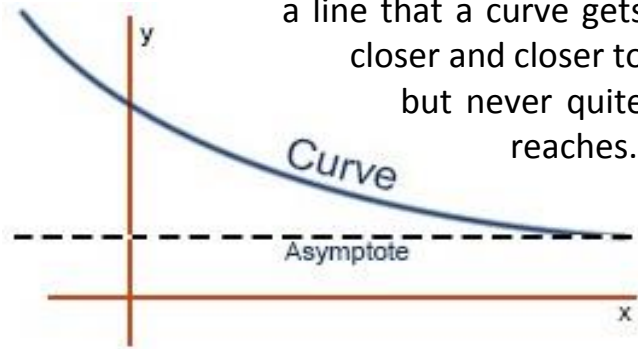
News

As I'm sure you know, Miss Smallman is leaving Camp Hill at the end of this term, so we thought we would take this opportunity to ask her what some of her favourite mathematical things are. You may not know this, but Miss Smallman did not do her Maths A-level until she was 27 years old.[1]
Another fact about Miss Smallman is that her favourite number is 29. I've also been asked to mention that when she leaves, she definitely isn't going to go and illegally pick any more of those endangered fractal plants, like we told you she had done back in newsletter number 4.
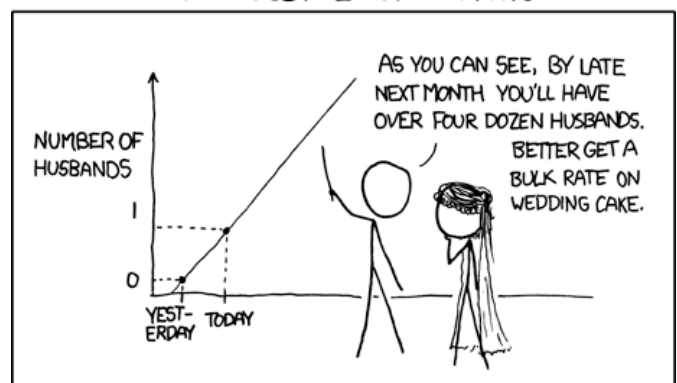
Maths Quote

Miss Smallman's favourite mathematician is Carl Gauss, because she really enjoys a mathematical technique known as Gaussian elimination. Why not look it up? Meanwhile, here is a quote from Gauss.

"It is not knowledge, but the act of learning, not possession, but the act of getting there, which grants the greatest enjoyment."
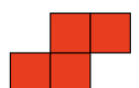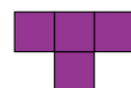
If, however, you are struggling to get there, don't forget maths workshop when you come back in September. It will be the same as always, except that Miss Smallman and Dr Gadd won't be there.

Maths Word

Miss Smallman's favourite maths word is **asymptote**, which is the name given to a a line that a curve gets closer and closer to but never quite reaches.

It comes from a Greek word that literally means 'not falling together'. Lots of graphs have asymptotes. For GCSE you need to know about the graphs of $y = \tan x$ and $y = 1/x$, which both have asymptotes, even though they look very different.

Maths Puzzle

Miss Smallman really enjoys sitting out in the sun with her factor 50 sun cream.
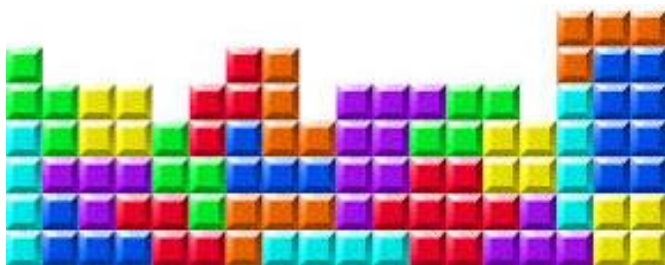**What is the smallest number that has exactly 50 factors?**

Joke [4]

1. So just a few years ago[2].
2. I had to say that, didn't I?[3]
3. That's the first time one of our footnotes has had a footnote of its own.
4. This joke has nothing to do with Miss Smallman. She definitely isn't leaving so she can start collecting husbands.

Games

You may be aware that a lot of games have an underlying mathematical structure to them, which means strategies can be developed that show you how to always win them. An example of this is the game Connect 4. It has been shown that, if you go first and place your first piece in the middle column you can always win on or before the 41[5] move. A computer named Deep Blue became famous in 1997 when it became the first computer to win a game of chess against the then world champion Garry Kasparov. It has also been shown that a Rubik's Cube (which Miss Smallman learned how to solve in 1980) can always be solved in at most 20 moves.[5] One of Miss Smallman's favourite games is called Tetris. You may have played it. If you haven't, look it up, and see if you can find out any interesting mathematical facts about it.

The Future

Miss Smallman has asked us to remind you what she will be doing every day next year, while you and I are hard at work.

5. As long as you know what you're doing and don't make a mistake.
6. This is definitely not a complete list. I just ran out of space.

Radio 4 Puzzle of the Day

Miss Smallman is a big fan of Radio 4's 'Puzzle of the Day' and she often comes into work talking about them. Here is today's puzzle.

John and Mishal buy a box of 500 chocolates to share between themselves.

The chocolates are labelled 1, 2, 3, 4, 5, … , 500.

John eats all the chocolates labelled following the arithmetic sequence 5, 10, 15, 20, …

Mishal eats all the chocolates labelled following the arithmetic sequence 7, 14, 21, 28, …

If they are both entitled to eat the same chocolate, in order to be fair, they decide that neither of them should eat the chocolate.

How many chocolates will be left uneaten?

Camp Hill Girls!

It's been another good year for Camp Hill Girls in terms of maths competitions. Here is a summary of some of the things we have achieved this year.[6]

Southampton University Cipher Challenge (5th place)
University of Birmingham Year 10 Big Maths Quiz (1st place)
Southampton University Maths Challenge (1st and 2nd place)
UKMT Team Challenge (national finals)
Intermediate Olympiad medal (top 100 nationally) for Kanakdurga Nanda.
South Network year 9 Team Maths Challenge (2nd place)
Edge Hill Maths Challenge (1st place)

If you're interested in taking part in any of these competitions next year, please let us know!