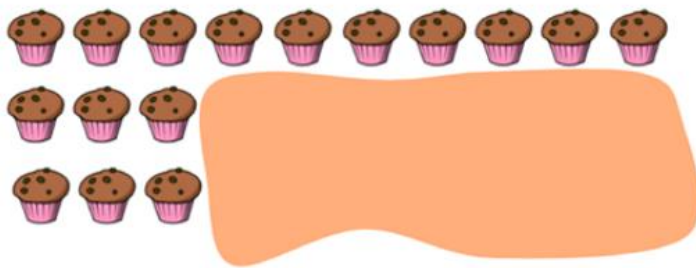


Family Challenge

Friday 3rd July

Challenge 1

30 cakes are arranged in an array. Some of the cakes are hidden.



How many cakes are hidden?

Challenge 2

Work out the missing numbers.

$$10 \times 2 = 5 \times \text{blue circle}$$

$$10 + 2 = 5 + \text{orange triangle}$$

$$10 \div 2 = 5 \div \text{green square}$$

$$10 - 2 = \text{yellow heart} - 5$$

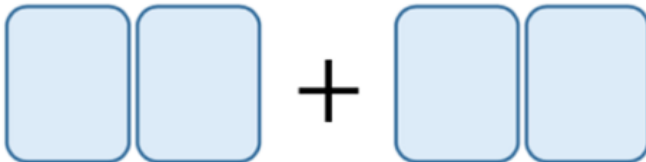
Challenge 3

Danni has these four digit cards.



Danni uses all four cards to make two 2-digit numbers.

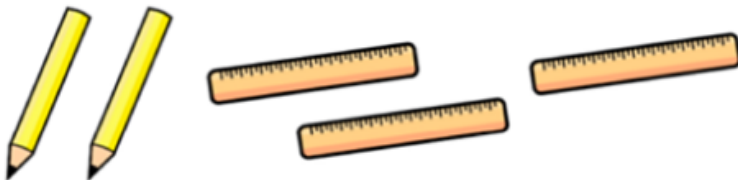
She then adds the two numbers together.



What is the greatest total she can make?

Challenge 4

Sonny buys 2 pencils and 3 rulers.



Each pencil costs 69p.

Sonny pays with a £5 note and receives £1.07 change.

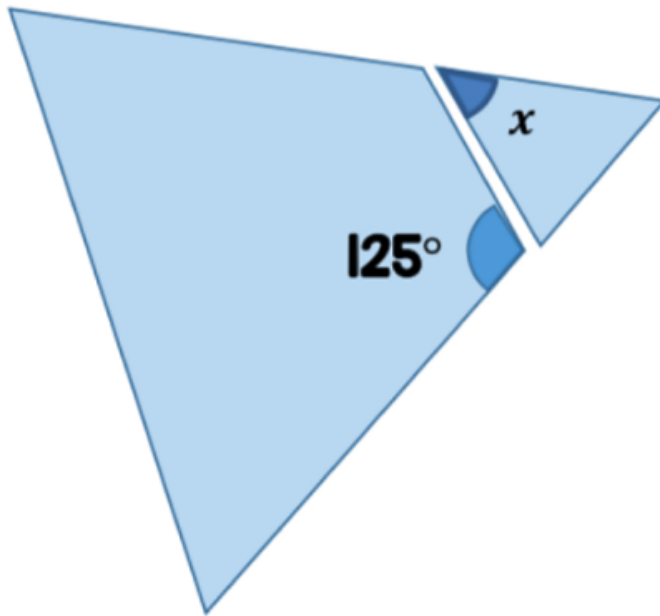
How much does a ruler cost?

Challenge 5

Adam has an equilateral triangle.

He cuts a corner off the triangle.

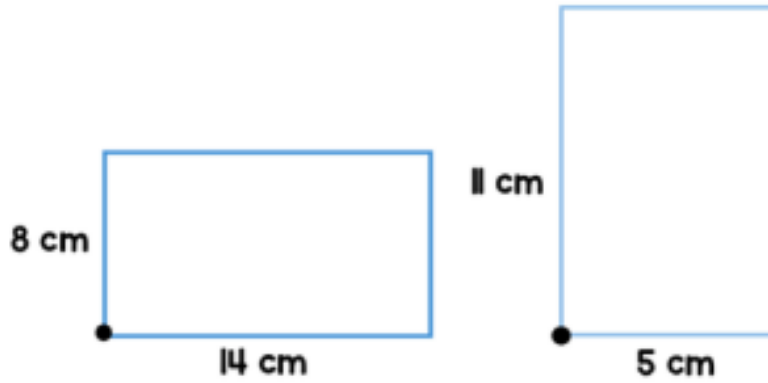
Here are the two pieces.



What is the size of the angle marked x ?

Challenge 6

Here are two rectangles.



The two rectangles are put on top of each other.

They are lined up so the black circles overlap.

The shaded area shows where the two rectangles overlap.



What is the area of the non-shaded parts of the shape?

Challenge 7



Today the ratio of my age to Anne's age is 1 : 3

In exactly 6 years time the sum of our ages is 84



Anne

How old was Anne this time last year?

Challenge 8

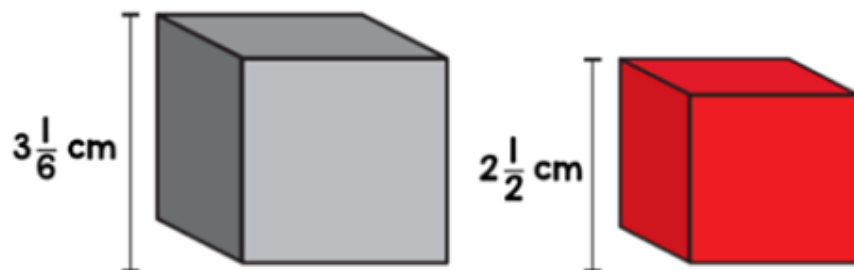
Here is a rule for generating a sequence.

Double the previous number and then subtract 1

The third term of the sequence is 25.

What is the difference between the first and fifth terms?

Challenge 9



Jack builds a tower using grey blocks.

Alex builds a tower using red blocks.

The towers are exactly the same height.

What is the minimum number of blocks they each use?

Challenge 10

A speedboat sets out from a port P on a bearing of 120° .

The speedboat travels at 48 mph.

A fishing boat sets out from port P on a bearing of 210° .

The fishing boat travels at 20 mph.

How far are the two boats apart after 90 minutes?

As a rough guide of difficulty level:

- **Challenge 1 and 2** are suitable for ages 5 to 7.
- **Challenge 3 to 6** are suitable for ages 7 to 11.
- **Challenge 7 to 10** are suitable for ages 11 to 15.

We want everyone to get involved with challenge day, so work together to solve as many as you can and share your solutions!

