

Friday 26th June

Today you have a range of puzzles to solve. You can either solve the algebra puzzle below, the challenges on the following page, or both. Remember to visit sumdog too!

Algebra Magic Square

I can express missing number problems algebraically.

Solve the nine equations below using $a = 2$ and $b = 5$.

Then write the answers in the magic square so that each row, column and diagonal have the total 30.

$4a + b =$			
$5b - 20 =$			
$2b + a =$			
$2a + b =$			
$(3a + b) - 1 =$			
$8a - b =$			
$5a - 2 =$			
$(6a + 2b) - 7 =$			
$(4b - 3a) \div 2 =$			

Here are your Friday Maths Challenges.

Remember to use the first 2 questions as a warm up, then see how many of the rest you can solve. Send us your workings and solutions!

Challenge 1

Rani has 38p.

I have 10p more
than Rani.



I have 20p less
than Eva.

How much money does Eva have?

Challenge 2

If

$$\triangle \times \triangle = 25$$

and

$$\bigcirc \times \bigcirc = 100$$

Work out the value of

$$\triangle \times \bigcirc$$

Challenge 3

A sequence is made up of three 2-digit numbers.

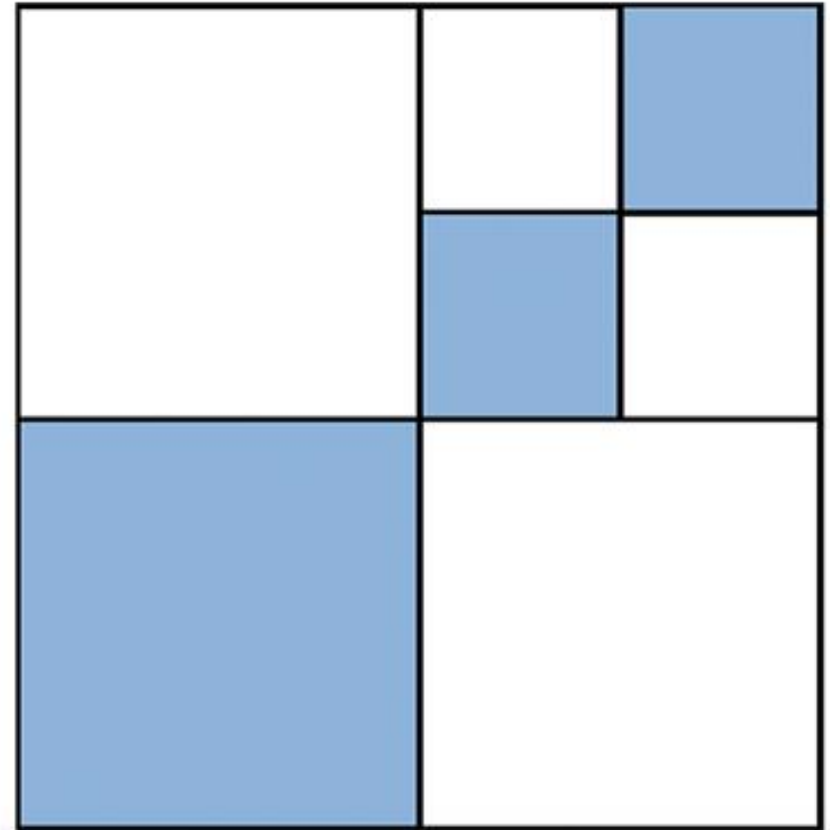
The sequence increases by eight each time. These are the digits that make up the three numbers.



Work out the numbers in the sequence.

Challenge 4

A square is divided into smaller squares.



What fraction of the square is shaded?

Challenge 5

The mass of an empty jar is 470 g.



6 marbles are placed in the jar.



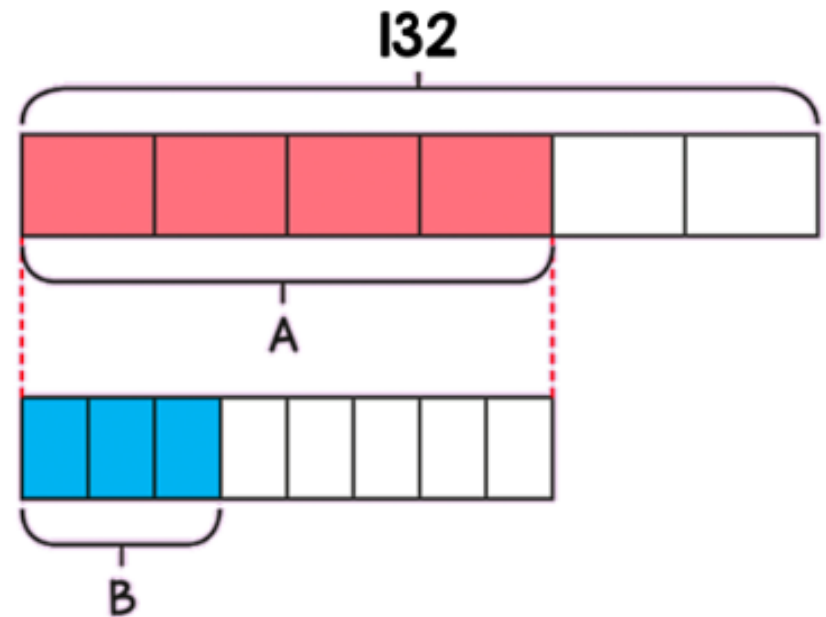
The total mass of the jar and marbles is now 1.1 kg.

Two of the marbles are removed.

What is the mass of the jar and marbles now?

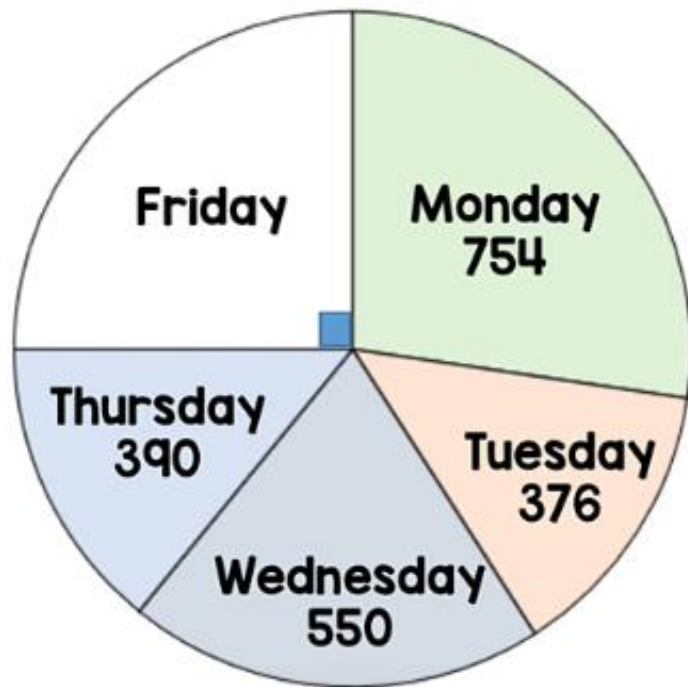
Challenge 6

Work out the value of B.



Challenge 7

The pie chart shows the number of visitors to a museum each day.



How many people visited on Friday?

Answers - Here is a possible magic square solution, you may have them in a different order.

Algebra Magic Square

I can express missing number problems algebraically.

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$4a + b =$	$5b - 20 =$ $25 - 20 =$ 5	$(6a + 2b) - 7 =$ $(12 + 10) - 7 =$ $22 - 7 =$ 15	$(3a + b) - 1 =$ $(15 + 5) - 1 =$ $20 - 1 =$ 10
$5b - 20 =$	$2b + a =$ $10 + 2 =$ 12	$(4b - 3a) \div 2 =$ $(20 - 6) \div 2 =$ $14 \div 2 =$ 7	$8a - b =$ $16 - 5 =$ 11
$2b + a =$	$4a + b =$ $8 + 5 =$ 13	$5a - 2 =$ $10 - 2 =$ 8	$2a + b =$ $4 + 5 =$ 9
$2a + b =$			
$(3a + b) - 1 =$			
$8a - b =$			
$5a - 2 =$			
$(6a + 2b) - 7 =$			
$(4b - 3a) \div 2 =$			

Challenge 1 - 68p

Challenge 2 - 50

Challenge 3 - 34, 42, 50

Challenge 4 - $\frac{6}{16} = \frac{3}{8}$

Challenge 5 - 890 g

Challenge 6 - 33

Challenge 7 - 690 people