1st October

10^4

10,000

```
        5 4
6 5 | 3 5 1 0        6 5
      3 2 5        x   5
      2 6 6       32 5
```

54

Work out the highest common factor (HCF) of 24 and 36

12

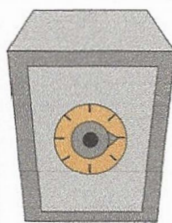Charlie's password is made up of six **different** digits.

He remembers it as three 2-digit numbers.

The first 2-digits is a square number between 10 and 30.

The second 2-digits is a prime number between 30 and 40.

The third 2-digits is a cube number between 10-99

List all his possible passwords

16 31 27   25 31 27
16 31 64   25 31 64
16 37 27   25 37 27
16 37 64   25 37 64

2nd October

$\square^2 + 1{,}600 = 50^2$

$50^2 = 2500$

$-\ 1600 = 900$

$30^2 = 900$

$\boxed{30}$

$7{,}014 \div 14$

$\begin{array}{r} 5\ 0\ 1 \\ 14\overline{)7\ 0\ 1\ 4} \end{array}$

$\boxed{501}$

In 2018, a Zoo had 520,000 visitors.

30% of the people visited in July.
35% of the people visited in August.

How many people visited the Zoo in the rest of the year?
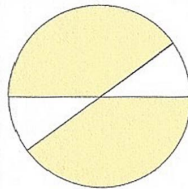
$182{,}000$

$100\% - (30\% + 35\%) = 35\%$

$10\% = 52{,}000$
$30\% = 156{,}000$
$5\% = 26{,}000\ +$
$35\% = 182{,}000$

In this circle, each shaded part is $\frac{2}{5}$ of the area of the circle.

The two white parts have the same area.

What fraction of the circle is **one** of the white areas? $\frac{1}{10}$
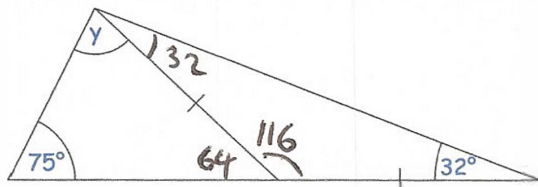
$\frac{2}{5} \times 2 = \frac{4}{5}$

$1 - \frac{4}{5} = \frac{1}{5}$

half of $\frac{1}{5} = \frac{1}{10}$

Find the size of angle y

$\underline{41^\circ}$

y, 32, 75°, 64, 116, 32°

3rd October

$$\frac{\square}{\square} = 0.875$$
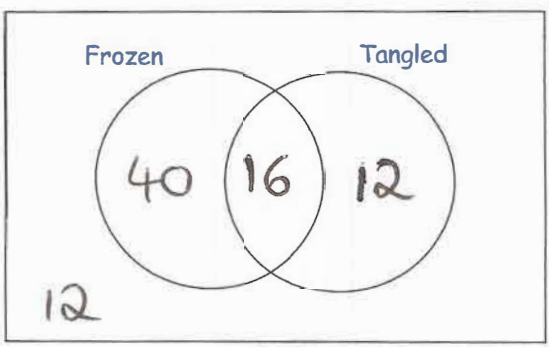
$\boxed{7/8}$

$$71 \times 254$$

$$\begin{array}{r} 254 \\ \times \quad 71 \\ \hline 254 \\ 17780 \\ \hline 18034 \end{array}$$

$\boxed{18034}$

There are 80 children in Year 6.

16 children have watched both the films Frozen and Tangled.

28 children have watched Tangled.

Twice as many children have watched Frozen than Tangled.

How many children have not watched Frozen or Tangled?

12

Frozen   Tangled

40 (16) 12

12

$28 - 16 = 12$

$2 \times 28 = 56 \quad 56 - 16 = 40$

$40 + 16 + 12 = 68 \quad 80 - 68 = 12$

What percentage of 20 is 9?

$$\frac{9}{20} = \frac{45}{100} = 45\%$$

4th October

$$\frac{\square}{\square} = 0.05$$

$\boxed{\frac{1}{20}}$

$20 - 4^2$

(16)

$\boxed{4}$

On a dice, the opposite faces always have a sum of 7.

Draw dots on the three empty faces of the net so that it could fold up to make a dice.

This diagram shows a park

| Play area $\frac{3}{5}$ | Tennis court $\frac{1}{4}$ |
| | Picnic area $\frac{3}{20}$ |

Work out the fraction of the park that is the picnic area.

$$\frac{3}{5} + \frac{1}{4} = \frac{12+5}{20} = \frac{17}{20}$$

$$1 - \frac{17}{20} = \frac{3}{20}$$

Work out 10% of $\frac{1}{2}$

0.05 or $\frac{1}{20}$

$0.5 \div 10 = 0.05$

5th October

$$\frac{4}{5} - \frac{1}{12}$$

$$\frac{48}{60} - \frac{5}{60} = \frac{43}{60}$$

$$\boxed{\frac{43}{60}}$$

40% of 90

$$10\% \text{ of } 90 = 9$$

$$9 \times 4 = 36$$

$$\boxed{36}$$

Lucy, Jenny and Harriet share some money.

Lucy gets $\frac{1}{3}$ of the money.   £16

Jenny gets $\frac{1}{4}$ of the money.

Harriet gets the rest of the money.

Lucy gets £16

How much more money does Harriet get than Jenny? $16 \times 3 = £48 \ (total)$
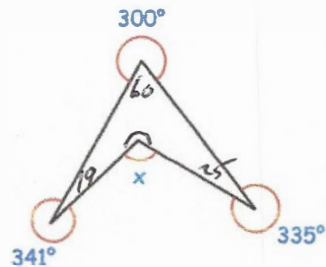
Jenny: $48 \div 4 = £12$

Harriet: £20   £8 more

Find the size of angle **x**

$$60 + 19 + 25 = 104$$
$$360 - 104 = 256$$
$$360 - 256 = \underline{104°}$$

300°
60
19   x   25
341°   335°

729 is both a square number and a cube number.

Find two other numbers that are both square numbers and
cube numbers

$1 \quad , \quad 64$

6th October

$3,276 \div 13$

$$13 \overline{) 3\,{}^26\,7\,{}^26}$$
$$2\,5\,2$$

252

$(10 - 4)^2$

$6^2 = 36$

36

What is the smallest possible number Timothy could be thinking of?

550

I am thinking of a whole number. Rounded to the nearest 100 it is 600.

What is the largest possible number Timothy could be thinking of?

649

For every 5 50p coins, Laura has 4 20p coins.

Laura has £56.00 in 20p coins.

How much money does Laura have altogether?

£56 ÷ 0.2 = 280 20ps

280 ÷ 4 x 5 = 350 50ps

350 x 0.50 = £175

£175 + £56 = £231

7th October

76×2.3

$$
\begin{array}{r}
2 \cdot 3 \\
\times \ 7 \ 6 \\
\hline
1 \ 3 \cdot 8 \\
1 \ 6 \ 1 \cdot 0 \\
\hline
1 \ 7 \ 4 \cdot 8
\end{array}
$$

| 174.8 |

$15\% \times 680$

10% of 680 = 68
5% of 680 = +34
　　　　　　 102

| 102 |

Here is a regular hexagon

Find the size of each angle

$720 \div 6 = 120°$

120°
x
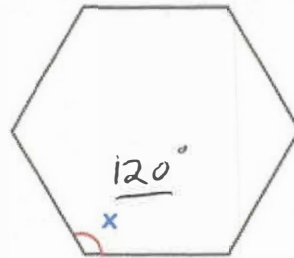
Chloe is building a fence for her garden.

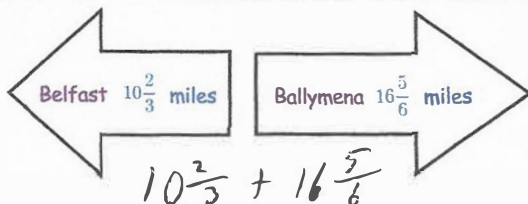The fence costs £9.25 per metre to build.
The fence is 16 metres long.

Work out the total cost of building the fence

$$
\begin{array}{r}
9 \cdot 25 \\
\times \ 16 \\
\hline
55 \cdot 56 \\
92 \cdot 50 \\
\hline
148 \cdot 00
\end{array}
$$

£148

Belfast $10\frac{2}{3}$ miles 　 Ballymena $16\frac{5}{6}$ miles

$10\frac{2}{3} + 16\frac{5}{6}$

Work out the distance from Belfast to Ballymena.

$\frac{32}{3} + \frac{101}{6}$

$\frac{64}{6} + \frac{101}{6} = \frac{165}{6}$

$27\frac{3}{6}$

$27\frac{1}{2}$ miles

8th October

$$\frac{6}{11} \div 2$$

$\frac{3}{11}$

```
            0 0 3 7
  4 9 | 1 ¹8 ¹8¹ ³4³
```

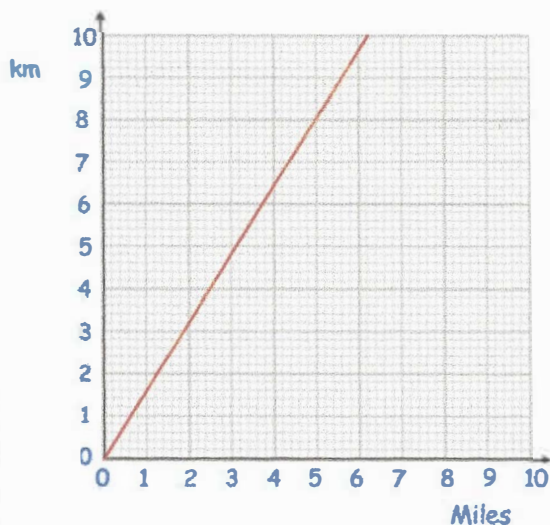|	4	9
	9	8
1	4	7
1	9	6
2	4	5
2	9	4
3	4	3

37

w + 8 = 13

Work out the value of **w**

5

w + 8 = 13
−8   −8
w = 5

This graph can be used to change between miles and kilometres.

km

Miles

Change 10 miles into kilometres

16 km

Change 40 kilometres into miles

25 miles

9th October

9^3

$9 \times 9 = 81$

$81 \times 9 = 729$

729

	1	6	5	4
×			2	6

There are 1625 sweets in a tub.
A group of friends share the sweets.

Each person gets 65 sweets.

How many friends are there?

25

$\begin{array}{r} 0025 \\ 65\overline{)1625} \end{array}$

$\begin{array}{r} 65 \\ 130 \\ 195 \\ 260 \\ \hline 325 \end{array}$

Write $\frac{1}{8}$ as a decimal

0·125

For every three 50p coins, Cain has two 20p coins.
Cain has £40 in 20p coins. 200 coins

How much money does Cain have altogether?

$200 \div 2 = 100$
$100 \times 3 = 300$ 50p coins

£150 + £40 = £190

10th October

$6.2 \times 3,000$

$$\begin{array}{r} 6.2 \\ \times\ 3\ 0\ 0\ 0 \\ \hline 1\ 8\ 6\ 0\ 0{\cdot}0 \end{array}$$

$$\boxed{18,600}$$

20% of 52

10% of $52 = 5.2$

$$\boxed{10.4}$$

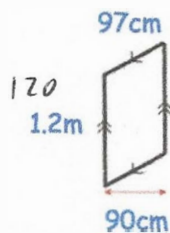

Depth of the river in cm
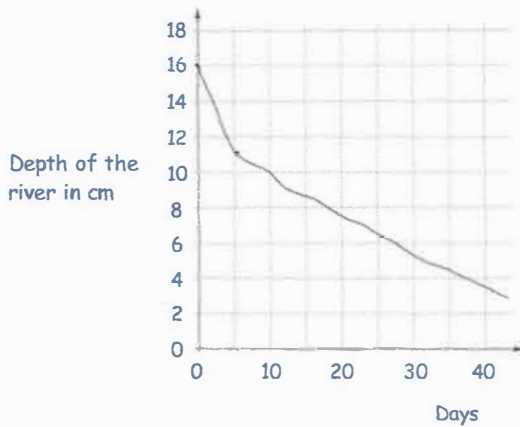
Days

What was the depth of the river after 10 days?

10 cm

How long did it take the river to go from a depth of 16cm to 11cm?

5 days

Work out the area of this parallelogram

97cm

120
1.2m

90cm

$$\begin{array}{r} 1\ 2\ 0 \\ \times\ 9\ 0 \\ \hline 1\ 0\ 8\ 0\ 0 \end{array}$$

$$\boxed{10800}\ \text{cm}^2$$

11th October

627×48

$$
\begin{array}{r}
6\ 2\ 7 \\
\times\quad 4\ 8 \\
\hline
5\ 0\ 1\ 6 \\
2\ 5\ 0\ 8\ 0 \\
\hline
3\ 0\ 8\ 9\ 6 \\
\end{array}
$$

| **30,096** |

$-15 - 16$

| **-31** |

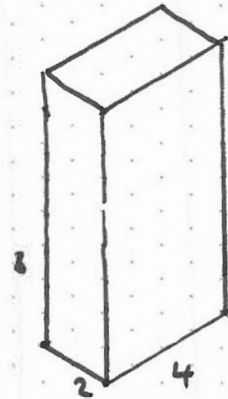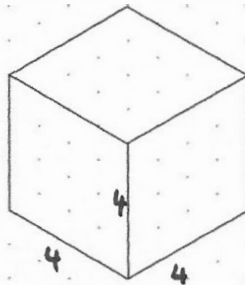
Here is a drawing of a cube on an isometric grid.

Draw a cuboid that has the **same** volume of the cube.

$4 \times 4 \times 4 = 64$

$4 \times 2 \times 8 = 64$

Here are five number cards.

The mean of the numbers on the five cards is 12.

| 13 | 5 | 18 | 2 | **22** |

Work out the missing number

$total = 12 \times 5 = 60$

12th October

$1,072 \times 24$

$$
\begin{array}{r}
1072 \\
\times \quad 24 \\
\hline
4288 \\
21440 \\
\hline
25728
\end{array}
$$

25728

$4,741 \div 11$

$$
\begin{array}{r}
0431 \\
11\overline{)4^47^34^1 1}
\end{array}
$$

431

Write 15% as a fraction

$$\frac{15}{100} = \frac{3}{20}$$

Katie has a pet dog, Maxi.

Maxi eats **two-thirds** of a can of dog food each day.

How many cans of dog food should Katie buy to last two weeks?

$$\frac{2}{3} \times \frac{14}{1} = \frac{28}{3}$$

$$9\frac{1}{3}$$

10 cans

Solve this equation

$9x + 10 = 7x + 32$

$-7x \qquad -7x$

$2x + 10 = 32$

$\qquad -10 \quad -10$

$2x = 22$

$\div 2 \qquad \div 2$

$x = 11$

13th October

$$\frac{\boxed{1}}{\boxed{3}} = 0.\dot{3}$$

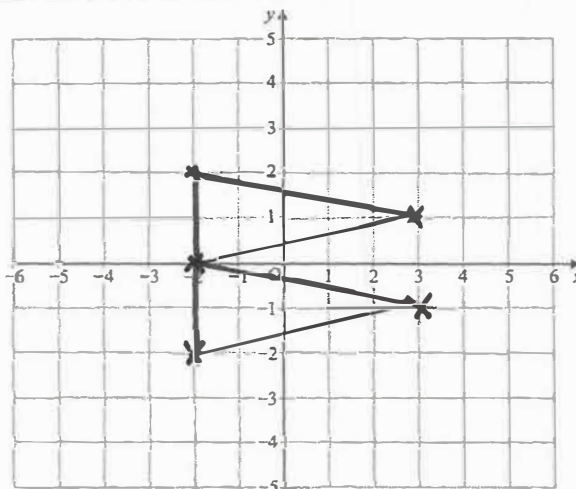$\dfrac{1}{3}$

$$12 + \underbrace{8 \times 13}_{104} + 7$$

123

Raheem draws an isosceles triangle on the grid.

Two of the points are

$(3, -1) \quad (-2, -2)$

Draw the triangle on the grid

Reflect your triangle in the x-axis.

The cost of making a book can be found using this rule

**Cost = number of pages × 5p
+ 45p for the cover**

A book costs £6.05

How many pages does that book have?

$605 - 45 = 560$

$560 \div 5 = \underline{112}$

14th October

$15\% \times 5{,}000$

$10\% - 500$
$5\% - 250 +$
$\overline{750}$

$\boxed{750}$

$2\frac{1}{2} \times 47$

$2 \times 47 = 94$
$\frac{1}{2} \times 47 = 23.5$
$\overline{117.5}$

$\boxed{117.5}$

A cake has a mass of 600g.
36% of the cake is sugar.

How many grams of sugar are in the cake?

$\underline{216g}$

$1\% \; of \; 600 = 6$

$36\% \; of \; 600$

$= 6 \times 36 = 216$

The letters **a**, **b**, **c** and **d** stand for numbers.

The sum of each row is given

a	a	a	a	24
a	a	b	b	28
b	c	c	c	29
a	b	c	d	31

Find the values of **a**, **b**, **c** and **d**

$24 \div 4 = 6 \quad (a)$

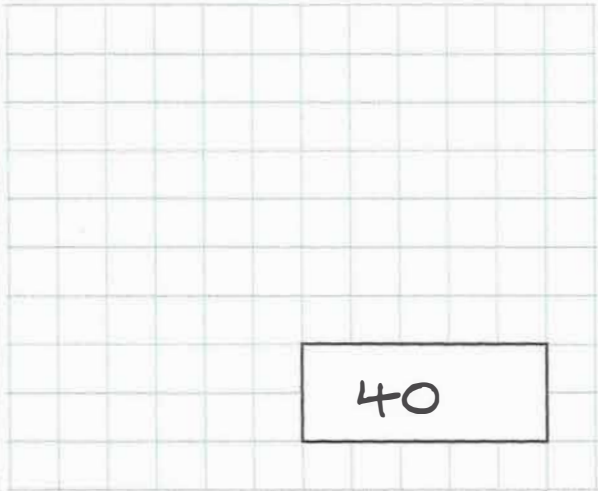$b = \dfrac{28 - 12}{2} = 8$

$3c = 29 - 8$

$d = 31 - 7 - 8 - 6$
$\quad = 10$

$\boxed{a = 6}$

$\boxed{b = 8}$

$\boxed{c = 7}$

$\boxed{d = 10}$

15th October

0.08×500

40

```
      1  8  5
×     1  3  4
      7  4  0
   5  5  5  0
1  8  5  0  0
2  4  7  9  0
```

24,790

Here is a regular pentagon.

Find the size of each angle

$540 \div 5 = \underline{108°}$
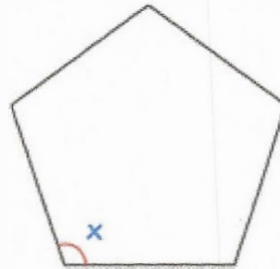
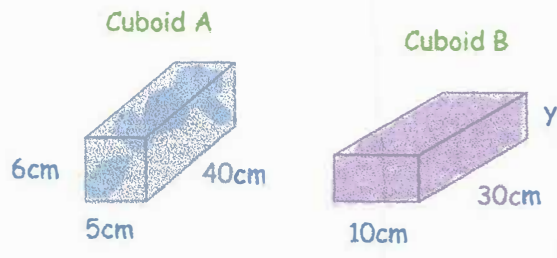$n = 18$

What is $20n + 70$?

$20 \times 18 + 70 = \underline{430}$

Cuboid A and Cuboid B have the same volume.

Find the height of cuboid B.

$Vol = 6 \times 5 \times 40 = 1200$

$1200 \div (10 \times 30) = \underline{4cm}$

Cuboid A

6cm 5cm 40cm

Cuboid B

y 30cm 10cm

16th October

9% of 7,000	$2\dfrac{1}{8} - \dfrac{1}{4}$

$$10\% - 700$$
$$1\% - \ \ 70 \ -$$
$$\overline{9\% \ \ \ 630}$$

$$\boxed{630}$$

$$\dfrac{17}{8} - \dfrac{2}{8} = \dfrac{15}{8}$$

$$\boxed{\dfrac{15}{8} = 1\dfrac{7}{8}}$$

$19 \times 345 = 6{,}555$ Use this multiplication to complete these calculations	190×345 $6555 \times 10 = \underline{65550}$
19×34.5 655.5	20×345 $6555 + 345 = \underline{6900}$
Put brackets into the calculation to make it true $6 \ \times \left(7 + 3\right) - 8 = 52$	

17th October

$$\frac{9}{10} \div 2$$

$$\boxed{\frac{9}{20}}$$

45% of 260

$$
\begin{aligned}
10\% &= 26 \\
20\% &= 52 \\
40\% &= 104 \\
5\% &= 13 \\
45\% &= 117
\end{aligned}
$$

$$\boxed{117}$$

Work out the value of **y**

$$3y = 24$$
$$\div 3 \qquad \div 3$$

$$y = 8$$

The time taken for 4 friends to complete a crossword are

    14 minutes
    1,200 seconds 20 mins
    three quarters of an hour 45 mins
    25 minutes

Arrange the times in order, starting with the quickest.

14 mins, 1200 seconds, 25 mins, ¾ hour.

Adam organised a charity concert at a theatre.

The hall holds 35 rows of 42 seats.
There were 50 empty seats.

Each person paid £18.

How much money did Adam raise?

$$35 \times 42 = 1470$$
$$1470 - 50 = 1420$$
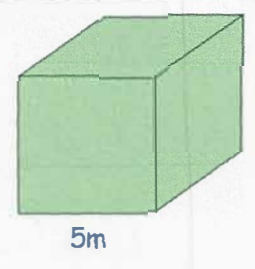$$1420 \times 18 = £25560$$

18th October

$120 - 30 \div 6$

$$115$$

$3,914 \times 27$

$$
\begin{array}{r}
3\ 9\ 1\ 4 \\
\times\ \ \ \ 2\ 7 \\
\hline
2\ 7\ 3\ 9\ 8 \\
7\ 8\ 2\ 8\ 0 \\
\hline
1\ 0\ 5\ 6\ 7\ 8 \\
\end{array}
$$

$$105,678$$

Work out the volume of this cube.

$S \times S \times S = 125\,cm^3$

5m

Find three different prime numbers with a sum of 43

3	+	17	+	23
prime number		prime number		prime number

The End

MMXIX

Write the year MMXVI in figures

2016

19th October

$$1\frac{1}{3} + 3\frac{7}{10}$$

$$\frac{4}{3} + \frac{37}{10}$$

$$= \frac{40 + 111}{30} = \frac{151}{30}$$

$$\boxed{\frac{151}{30} = 5\frac{1}{30}}$$

$$\begin{array}{r} 2\,7 \\ 4\,2\,\overline{\smash{\big)}\,1\,1\,3^{29}4} \end{array}$$

$$\boxed{27}$$

Draw the diameter on this circle
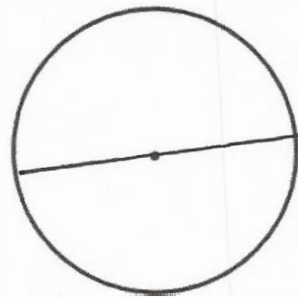
Lindsey is planting daffodil bulbs

For every 7 bulbs Lindsey planted, only 5 bulbs grew into daffodils
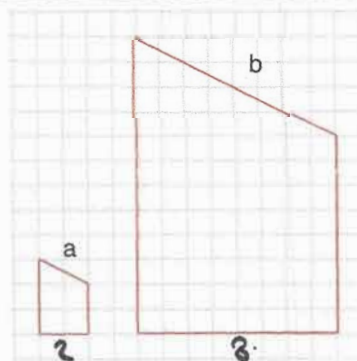
Altogether 70 daffodils grew

How many bulbs did Lindsey plant?

$$70 \div 5 = 14$$
$$14 \times 7 = \underline{\underline{98}}$$

Here are two similar shapes.

Write down the ratio of side a to side b.

$$a : b = \boxed{1 \;:\; 4}$$

20th October

$$180 \times \frac{4}{5}$$

$$180 \div 5 = 36$$
$$\times 4$$
$$= 144$$

144

$$18 \overline{\smash{\big)}16\,3\,8} \quad 9\,1$$

91

Find the size of angle x.

total = 720°

x = 720 - 595
x = 125°

130°   120°
110°   100°
x   135°
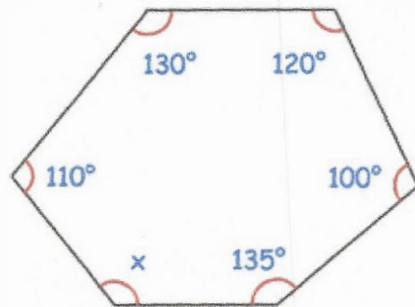
Burt is making cupcakes
He has made 400 cupcakes.
Burt places the cupcakes in boxes of 18.

How many boxes can he fill?

22

$$400 \div 18 = 22 \text{ r } 4$$

The pie chart shows information about the 72 counters in a bag.
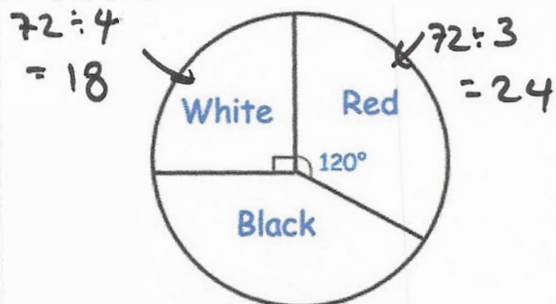
How many counters are black?

$$72 - (18 + 24) = \underline{30}$$

$$72 \div 4$$
$$= 18$$

$$72 \div 3$$
$$= 24$$

White   Red
120°
Black

21st October

$5,040,118 - 1,876,094$

$$\begin{array}{r} 5\,0\,4\,0\,1\,1\,8 \\ -\ 1\,8\,7\,6\,0\,9\,4 \\ \hline 3\,1\,6\,4\,0\,2\,4 \end{array}$$

3,164,024

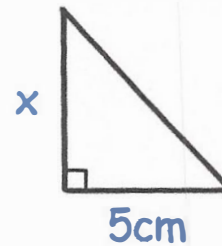$$\begin{array}{r} 3\,7\,9\,1 \\ \times\quad 3\,1 \\ \hline 3\,7\,9\,1 \\ 1\,1\,3\,7\,3\,0 \\ \hline 1\,1\,7\,5\,2\,1 \end{array}$$

117,521

The area of the triangle is $21\,cm^2$

Find the height of the triangle, x

$21 \times 2 = 42$
$42 \div 5 = 8.4\,cm$

x

5cm

A new snack bar contains 12g of sugar.

$\frac{3}{10}$ of the snack bar is sugar.

Work out the mass of the snack bar

40g

12 is $\frac{3}{10}$

4 is $\frac{1}{10}$

Work out the value of **u**

$2u - 9 = 6$

$2u = 15$
$u = 7.5$

22nd October

31×2.8

```
    3 1
  x 2 8
  2 4 8
  6 2 0
  8 6 8
```

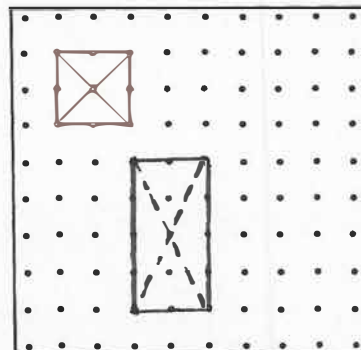86.8

5% of 630

10 % is 63
5 % is 31.5

31.5

Draw a 305° angle

305°
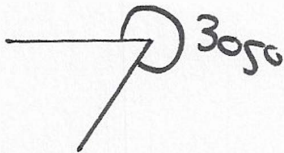
Write $\frac{14}{25}$ as a percentage

$\frac{14}{25} = \frac{56}{100}$ ×4 ×4

56%

The diagonals of a square cross at right angles.

On the grid, draw a different type of quadrilateral where the diagonals **do not** cross at right angles

23rd October

$$\frac{5}{9} \times \frac{1}{2}$$

$$\frac{5}{9} \times \frac{1}{2} = \frac{5}{18}$$

$\frac{5}{18}$

$$40 - (1 + 3)^2$$

$$40 - (4)^2$$

$$40 - 16$$

24

A bus travels 180 miles at a speed of 40 miles per hour.
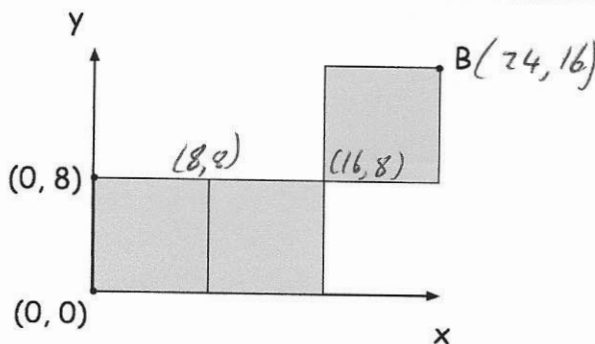
How long does the journey take?

$$t = \frac{d}{s} \qquad t = \frac{180}{40} = 4.5$$

$4\frac{1}{2}$ hours

Find the lowest common multiple (LCM) of 18 and 20

180

---

y

B(24, 16)

(8,8)

(16, 8)

(0, 8)

(0, 0)

x

Three squares are placed on a grid. Find the coordinates of point B

$(24, 16)$

24th October

$71 \div 4$

$$\begin{array}{r} 1\,7.7\,5 \\ 4\overline{\smash{)}7\,^31.^30^40} \end{array}$$

17.75

12% of 3,000

10% - 300
1% - 30
2% - 60

300 + 60 =

360

Two whole numbers multiply together to give an answer of 800.

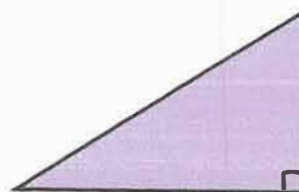Neither of the numbers contains the digit zero.

What are the two numbers?

25×32

The area of this triangle is $54cm^2$

Find the height of the triangle.

$54 \times 2 = 108$

$108 \div 12 = \underline{9cm}$

12cm

Estimate the value of

$9.03 + 19.87 \times 3.08 - 4.97$

≈ 65

$10 + 20 \times 3 - 5$

$= 10 + 60 - 5$

25th October

$0.6 \times 2,000$

$6 \times 2000 =$

12000

| 1200 |

$1,326 \div 17$

$$\begin{array}{r} 7\;8 \\ 17\overline{\smash{)}1\;3\;2\,'6} \end{array}$$

| 78 |

Matthew says that

$9 + 4 \times 2 = 26$

Is Matthew correct?
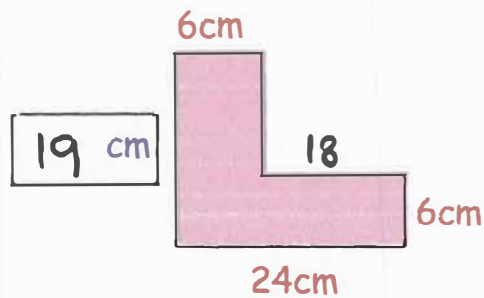
No, using the correct
order $4 \times 2 = 8$, $9 + 8 = \underline{17}$

The perimeter of this shape is 86cm

Find the missing length

$\underline{19\,cm}$

6cm

| 19 cm | 18

24cm   6cm

Work out the difference between the square root of 64 and the square root of 169.

$\sqrt{64} = 8 \quad \sqrt{169} = 13$

$13 - 8 = \underline{5}$

26th October

$80\% \times 700$

$$10\% = 70$$
$$\times \quad 8$$
$$\overline{560}$$

560

$4\dfrac{1}{5} - \dfrac{1}{3}$

$\dfrac{21}{5} - \dfrac{1}{3}$

$\dfrac{63 - 5}{15} = \dfrac{58}{15}$

$\dfrac{58}{15} = 3\dfrac{13}{15}$

Complete the table

Shape	Angles add up to
Triangle	180°
Quadrilateral	360°
Pentagon	540°
Hexagon	720°

Work out the value of **k**

$16 - \mathbf{k} = 5$

$k = 11$

Work out the volume

$5 \times 12 = 60$
$60 \times 22 = 1320 \text{cm}^2$

5cm   22cm
12cm

27th October

1.76×8

```
    1 . 7 6
  x       8
  1 4 · 0 8
    6   4
```

14·08

```
          1 2 4
  3 5 | 4 3 ⁸4 ⁴0
```
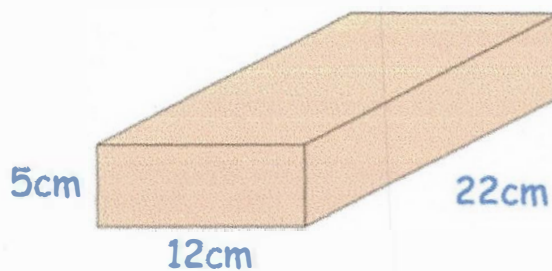
124

This sequence increases by an equal amount each time.

Find the three missing numbers

26

| 6 | 12.5 | 19 | 25.5 | 32 |
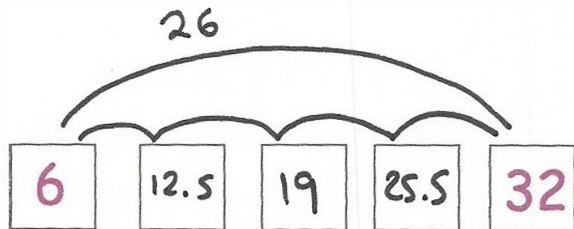
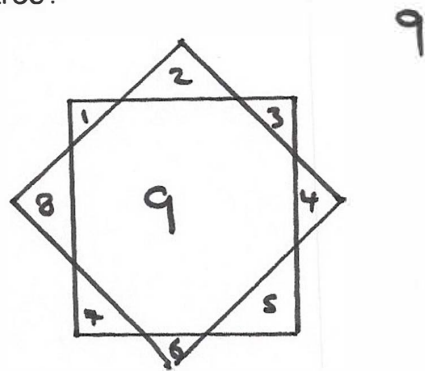
This diagram shows two squares that overlap to make 3 regions.

3
2
1
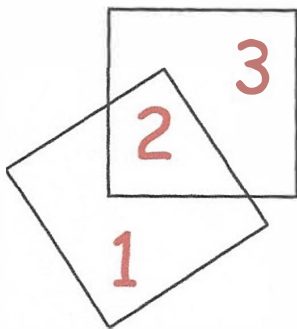
What is the greatest number of regions that can be made using two overlapping squares?

9

1 2 3 4 5 6 7 8 9

28th October

$\dfrac{1}{8} \div 4$

$\frac{1}{8} \times \frac{1}{4} =$

$\boxed{\frac{1}{32}}$

$-60 + 125$

$\boxed{65}$

Find the shaded area

Rectangle $13 \times 15 = 270$

Triangle $7 \times 15 = \underline{105 \, cm^2}$

18cm

15cm

7

11cm
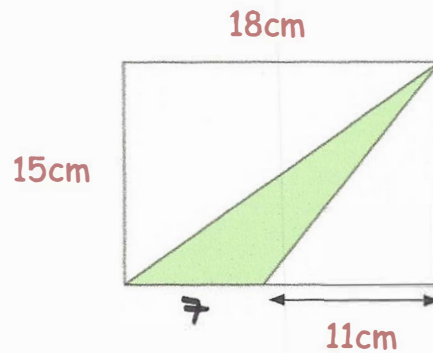
Work out the value of **x**

$5x + 20 = 35$

$\underline{x = 3}$

$35 - 20 = 15$

$15 \div 5 = 3$

Convert 3.5 kilometres into millimetres

$\underline{3,500,000 \, mm}$

$3.5km = 3500 \, m$

$= 350000 \, cm$

$= 3500000$

29th October

$$\frac{7}{20} = \boxed{35 \ \%}$$

$$\boxed{35 \qquad \%}$$

$$\begin{array}{r} 1\ 6\ 2 \\ 2\ 4\ \overline{)3\ 8\ ^{14}8\ ^48} \end{array}$$

$$\boxed{162}$$

Draw a pie chart to show this information

Breed	Frequency	
Spaniel	11	110
Poodle	7	70
Greyhound	4	40
Jack Russell	14	140

36 → 360
x 10
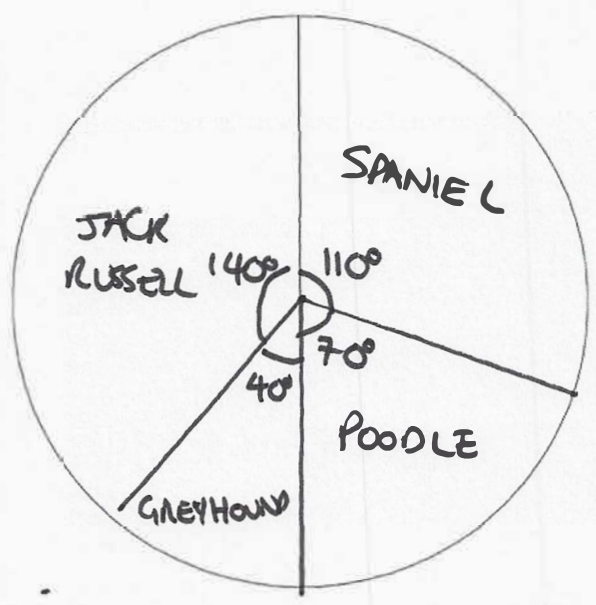
The two triangles are similar.

Work out the missing length

50 ÷ 20 = __2.5cm__

6cm 6.5cm ÷20
cm
1.2m 120cm 1.3m
50cm

Name: **Answers**
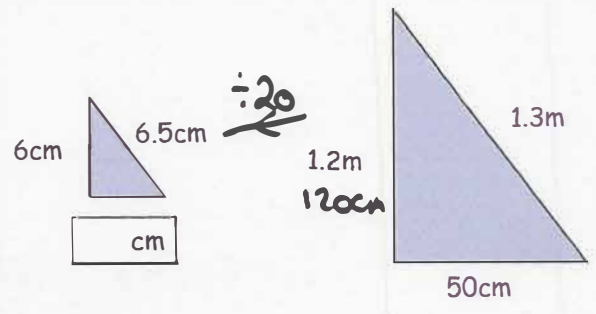
Platinum

30th October

$0.065 =$ **6.5** %

6.5 %

$\dfrac{\square}{40} = 0.3$

12

$42 \times 31 = 1,302$

Use this multiplication to complete the calculations below

$42 \times 62 \qquad 1302 \times 2 =$

2604

$21 \times 31 \qquad 1302 \div 2$

$= \underline{651}$

42×32

$1302 + 42 = 1344$

A sequence of numbers starts at 15 and follows the rule

"treble the last number and add 4"

15   49   151   457 ...

The number 4,129 is in the sequence.

Calculate the number which comes immediately before 4,129.

$4129 - 4 = 4125$

$4125 \div 3 = \underline{1375}$

31st October

961×223

```
      9 6 1
  ×   2 2 3
    2 8 8 3
  1 9 2 2 0
1 9 2 2 0 0
2 1 4 3 0 3
```

$\boxed{214303}$

$$\frac{\Box}{\Box} = 62.5\%$$

$\boxed{\dfrac{5}{8}}$

Stuffed Turkey

Serves 4

Turkey	500g
Red Onion	1
Garlic Cloves	2
Chestnut Mushrooms	150g
Spinach	140g
Chicken Stock	300ml

Dylan wants to make Stuffed Turkey for 14 people.

How much of each ingredient is needed?

$14 \div 4 = 3.5$

$\times 3.5 = 1750g$
$= 3\frac{1}{2}$
$= 7$
$= 525$
$= 490g$
$= 1050mL$

Kelly has 7 pence more than Andy.
Georgia has 8 pence less than Andy.

They have £1.48 in total.

How much money does Andy have?

K $a+7$
A a $3a - 1 = 1.48$
G $a - 8$

$3a = 1.49$ $a = \dfrac{1.49}{3} =$