Problems of the Day 2020

1 Fill in the missing numbers.

100 less than 20,000 is ☐

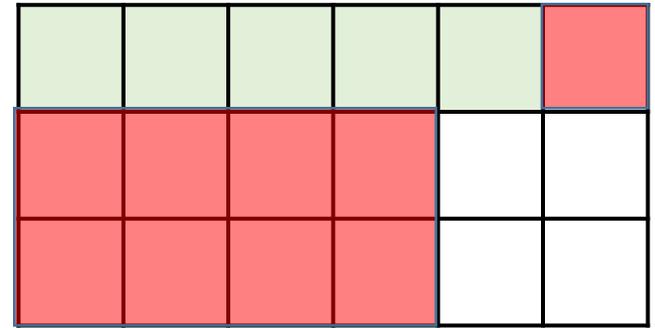☐ more than 20,000 is 20,600

2

25% of my number is 24

What number is Teddy thinking of?

3 Lucy shades in part of a rectangle.

She shades some more squares.

$\frac{7}{9}$ of the rectangle is now shaded.

How many more squares did Lucy shade?

White Rose Maths

Problems of the Day 2020

Day 2

1 Ron and Eva each make a 3-digit number from these digit cards.
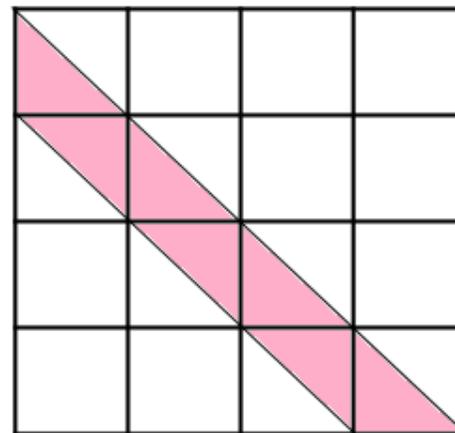
3 **6** **8**

- Ron makes the largest even number possible.
- Eva makes the smallest odd number possible.

What is the difference between their numbers?

2 Circle all the fractions that are greater than 1 but less than 2

$$\frac{12}{5} \qquad \frac{12}{6} \qquad \frac{12}{7} \qquad \frac{12}{8}$$

3 What fraction of this shape is shaded?

White Rose Maths

1 Which of these numbers round to 2,000 to the nearest 100?

1,950   2,312   2,099   2,045

2 What are the missing numbers?

$6.4 = 1 + \boxed{}$

$3\dfrac{2}{5} = 1 + \dfrac{\boxed{}}{5}$

3 Annie has a 1 metre piece of wire. She cuts the wire into two pieces. She uses the smaller piece to make this rectangle.

14 cm

4 cm
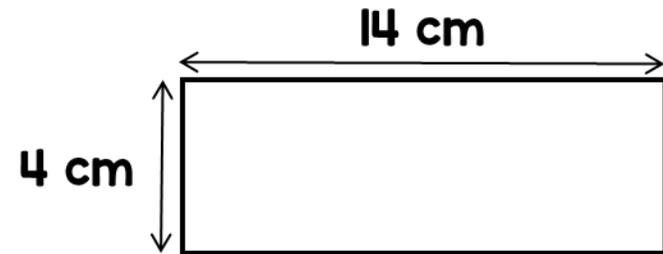
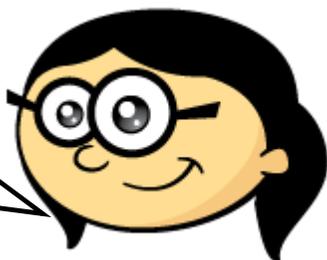She uses the other piece of wire to make a square.

What is the length of one side of the square?

1 What are the missing digits?

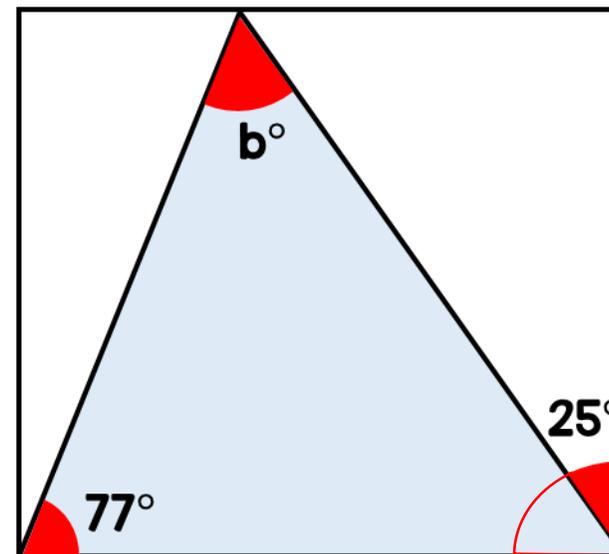$$3\boxed{} + \boxed{}5 = 111$$

2 Annie and Ron each think of a number.

I'm thinking of the number 6

The product of their numbers is 762

Work out Ron's number.

3 Find the size of angle b.

White Rose Maths

Problems of the Day 2020

1 Marbles are put into bags of 10

- 67 bags of marbles are packed.
- 3 more marbles are added to each bag.

How many marbles are there in total now?

2 Work out the missing digits.

$$5 \times \boxed{} \times \boxed{} = 105$$

3 A toy train costs three times as much as a rocket.

The total cost of the train and rocket is £52

How much does the train cost?

White Rose Maths

1 The table shows the ages of people in a theme park.

Age	Number of people
Under 18	126
18 - 60	195
Over 60	38

These are the entry costs.

How much money did the theme park make from entry costs?

Under 18s
£5

18 - 60
£10

Over 60s
£7

Given that $100 \div 2 = 50$

△ + △ + ☆ + ☆ = 100

♥ + ♥ + △ + ☆ = 78

Work out the value of the ♥

3 What are the missing numbers?

$$\boxed{} \times 10 = 42$$

$$\boxed{} \div 10 = 42$$

White Rose Maths

1 There are 25 children in a class.
The bar chart shows the number of children in the class who walk to school each day.

Number of children who walked to school

20					
18		▓			
16	▓				
14					▓
12				▓	
10					
8					
6					
4			▓		
2					

Mon   Tues   Wed   Thur   Fri   **Day**
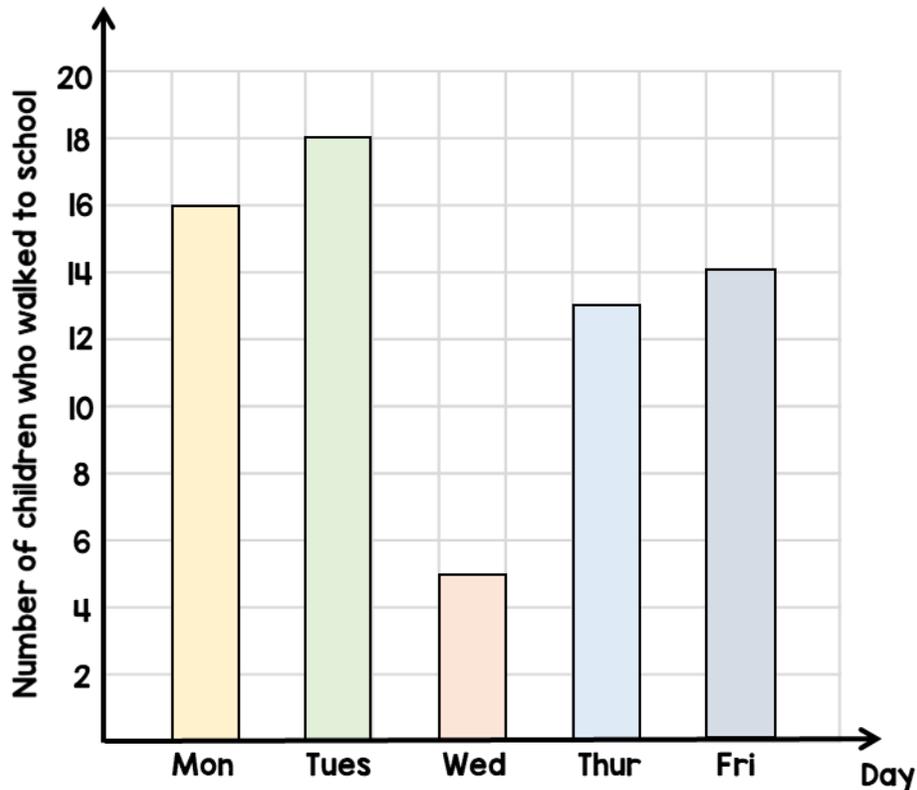
(a) What percentage of the class walked to school on Thursday?

(b) One of the days it rained. Which day do you think it was? Explain to your friend.

2 Order the following numbers. Start with the smallest.

$$3.1 \qquad \frac{18}{5} \qquad 3\frac{1}{4}$$

White Rose Maths

Problems of the Day 2020

1 Workers in a factory make toys.

- On Monday they make 2,350 toys.
- On Tuesday they make 235 more toys than they did on Monday.

By Wednesday they have to make 7,500 toys in total.

How many toys do they need to make on Wednesday to make 7,500 in total?

2

Carrots
£1.80 per kg

How much does 250 g of carrots cost?

3

Parsnips
£2.60 per kg

How much does 300 g of parsnips cost?

White Rose Maths

1 The cost of a pineapple is half the cost of a melon.

£3.50 each

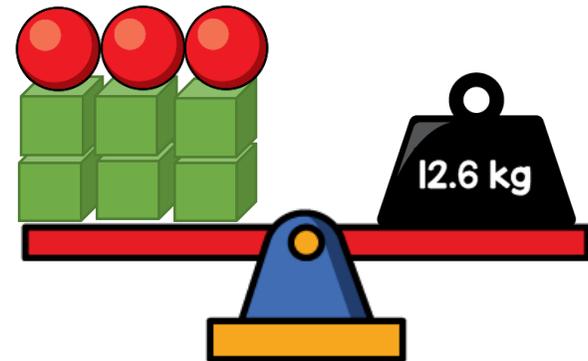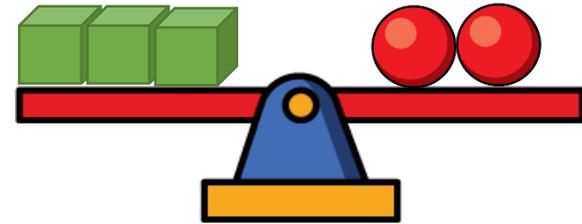How much does the pineapple and melon cost altogether?

2 Tommy thinks of a number.

5 is a factor of my number

Does Tommy's number have to be odd? Explain your answer.

3 Gina balances some scales.

12.6 kg

What is the mass of a cube?

White Rose Maths

Problems of the Day 2020

1 Here are some digit cards.

| 1 | 4 | 5 | 9 |

Find the 4-digit number that is closest to 5,000

You may use each card only once.

2 Complete the number sentences.

$$65 + \boxed{} = 79$$

$$83 + 28 = 82 + \boxed{}$$

3 Three identical rectangles are arranged to make a shape.

7 cm

3 cm

2 cm

4.5 cm
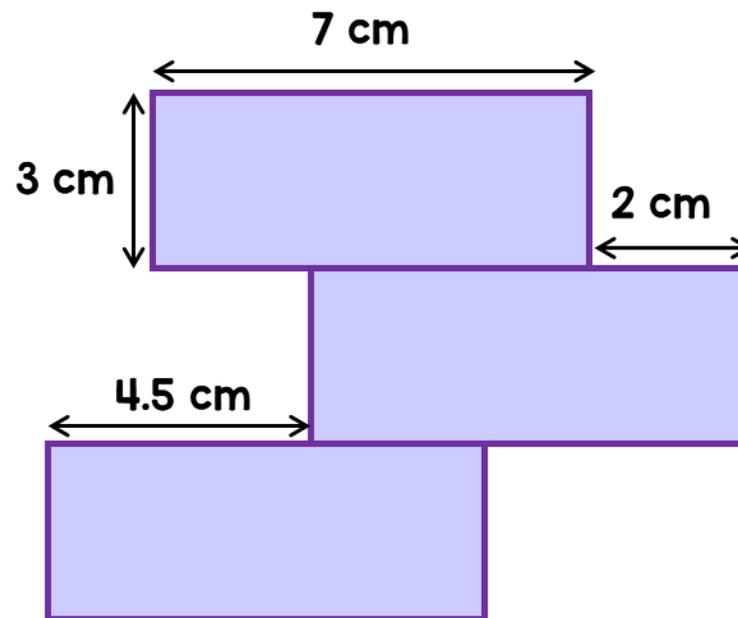
What is the perimeter of the shape?

White Rose Maths

1 **Use $<$, $>$ or $=$ to make these number sentences correct.**

$$9 \times 7 \bigcirc 8 \times 7$$

$$48 \div 2 \bigcirc 48 \div 4$$

$$300 \times 2 \bigcirc 20 \times 30$$

2 **There are 1,500 children in a school.**
565 of the children are girls.
How many more boys than girls are in the school?

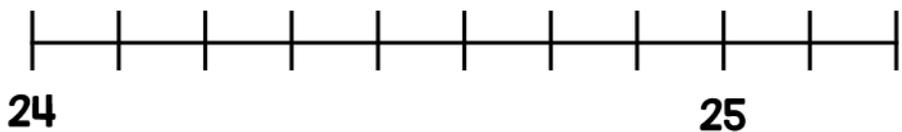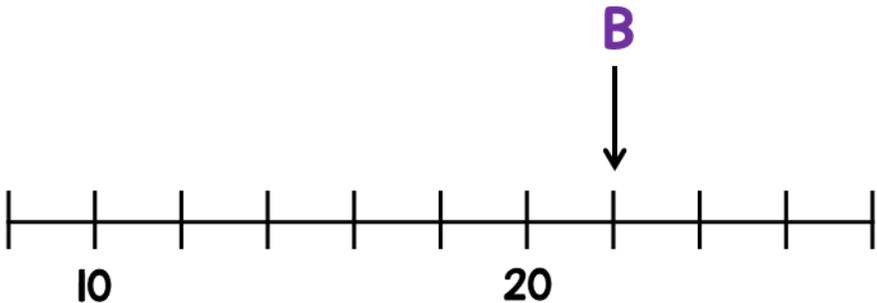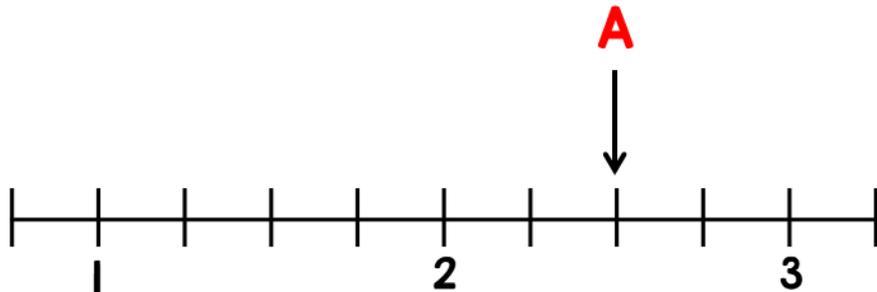**3** Mr Patel writes a number on the board.

- Leon finds $\frac{1}{2}$ of the number.

- Sophie finds $\frac{1}{3}$ of the number.

- Leon's number is 7 more than Sophie's.

What is the number Mr Patel started with? This bar model may help you.

White Rose Maths

Problems of the Day 2020
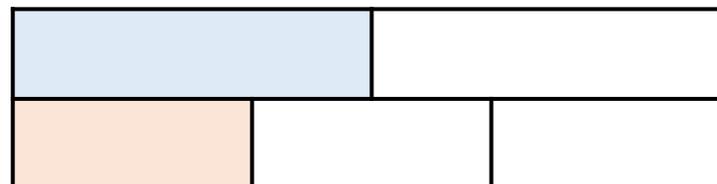
1 Given than $A + B = C$

Draw an arrow pointing to C

A

|---|---|---|---|---|---|---|---|---|---|
  1   2   3

B

|---|---|---|---|---|---|---|---|---|---|
  10   20

|---|---|---|---|---|---|---|---|---|---|
24   25

2 George has a box of counters.

- For every 2 red counters there are 5 blue ones.
- George removes 36 blue counters from the box.
- There are now the same amount of red and blue counters.

How many red counters were in the box at the start?

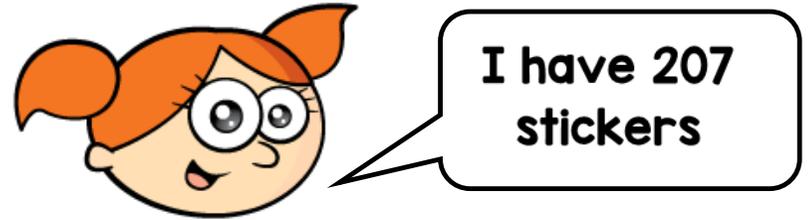**3** Elijah says he divided 32 by a number and got 64

Is this possible?

White Rose Maths

1 Sam has £29

He gets £28 more for his birthday.

He buys this cap and jumper with his money.

£12.50

£27.99

How much money does he have left?

2 One fifth of a number is 12
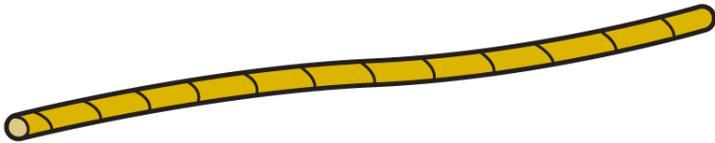
What is a half of the number?

3

I have 207 stickers

I have 150 stickers

Mo gives Alex some stickers.

Alex now has twice as many as Mo.

How many stickers did Mo give Alex?

White Rose Maths

Problems of the Day 2020

1 Circle all the numbers equivalent to 0.25

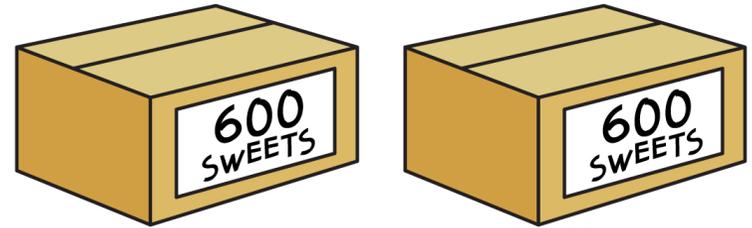$$0.4 \qquad \frac{50}{100} \qquad \frac{25}{100} \qquad \frac{1}{4}$$

2 A rope measures 2.8 metres.

The rope is cut into 10 equal sized pieces.
What is the total length of 5 of these pieces?

3 Sweets come in boxes of 600
Danny has two boxes of sweets.

600 SWEETS   600 SWEETS

He packs the sweets into smaller bags.

There are 21 in each bag.

21 SWEETS

How many bags can Danny fill using all the sweets?

White Rose Maths

Problems of the Day 2020

1 On a bookcase

- $\frac{5}{8}$ of the books are fiction books.
- The rest are non-fiction.
- There are 72 non-fiction books.

How many books are fiction?

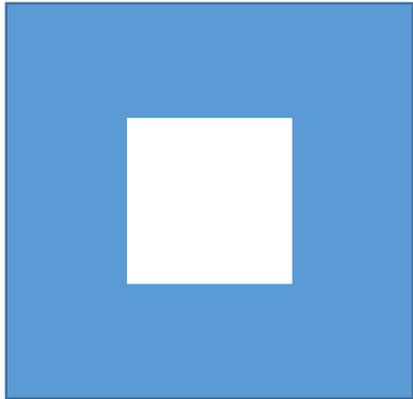**2** Amir has two cartons of apple juice.

He shares all the juice equally between these glasses.

How much apple juice does he pour into each glass?

Yasmin has a large blue square piece of paper.

She cuts out a 4 cm x 4 cm square from the centre.

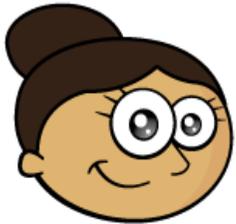The area of the blue region is 65 cm². What is the length of the large blue square?

2 Work out the value of each symbol.

$$\triangle + \bigstar + \diamond = 100$$
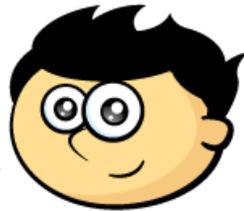
$$\triangle + \diamond = 67$$

$$\bigstar - \diamond = 18$$

White Rose Maths

1 Jack and Dora each have some money.

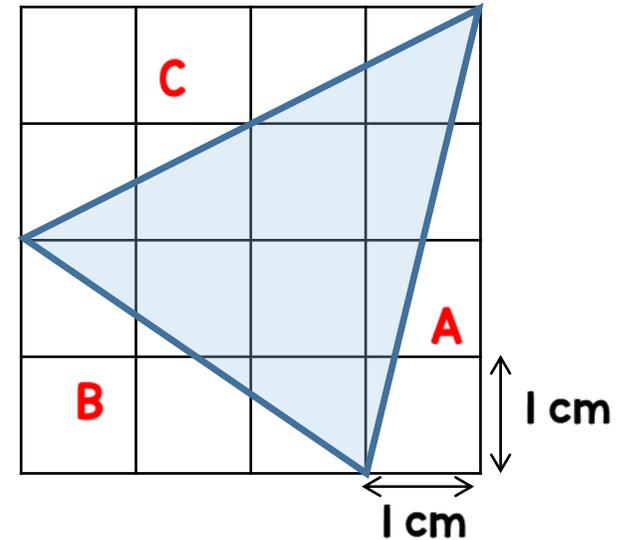I spent $\frac{1}{3}$ of my money.

I spent $\frac{1}{4}$ of my money.

They have the same amount left.

Dora spent £72

How much money did Jack spend?

2 What is the area of the triangle?

C

A

B

1 cm

1 cm

3 Write down all the common multiplies of 4 and 6 that are less than 50

Show or explain your method.

White Rose Maths

1 A can holds 330 ml of pop.

Pop is sold in packs of 6

Karl buys 12 packs of pop.

How many litres of pop does he have?

2 £290 is shared between 10 boys and 12 girls.

Each girl receives £15

How much money does each boy receive, if they each get the same amount of money?

3 Here is a sequence

2, 5, 9, 12, 2, 5, 9, 12, 2, 5, 9, 12, …

What is the sum of the first 200 numbers in this sequence?

Explain your method.

Problems of the Day 2020

1 The diameter of a 10p coin is 24.5 mm.

The diameter of a 5p coin is 18 mm.

Some coins are laid out end to end.

What is the distance marked *b* in the diagram?

2 Mrs Green bakes muffins.

She sells them in her shop.

- On Monday she bakes 200 and sells 70% of the them.
- On Tuesday she bakes twice as many muffins but has the same amount left.

What percentage of the muffins did she sell on Tuesday?

1 Complete these number sentences.

$$25 + 25 + 25 + 25 = \boxed{} \times 25$$

$$10 + 10 + 10 + 10 = \boxed{} \times 5$$

$$25 + 25 + 25 + 25 = \boxed{} \times 5$$

$$25 + 25 + 25 + 25 = \boxed{} \times 100$$

$$25 + 25 - 25 - 25 = \boxed{} \times 25$$

2 Louise is thinking of a 4-digit number.

Here are some clues to the number.

The number lies between 4,000 and 5,000

All the digits are different

The digit in the tens place is twice the digit in the thousands place

The sum of the digits is 24

The number is odd

What could Louise's number be?

White Rose Maths