

# Key stage 2

## Mathematics

### Paper 2: reasoning

First name						
Middle name						
Last name						
Date of birth	Day		Month		Year	
School name						
DfE number						



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## Instructions

You **must not** use a calculator to answer any questions in this test.

### Questions and answers

You have **40 minutes** to complete this test.

Follow the instructions for each question.

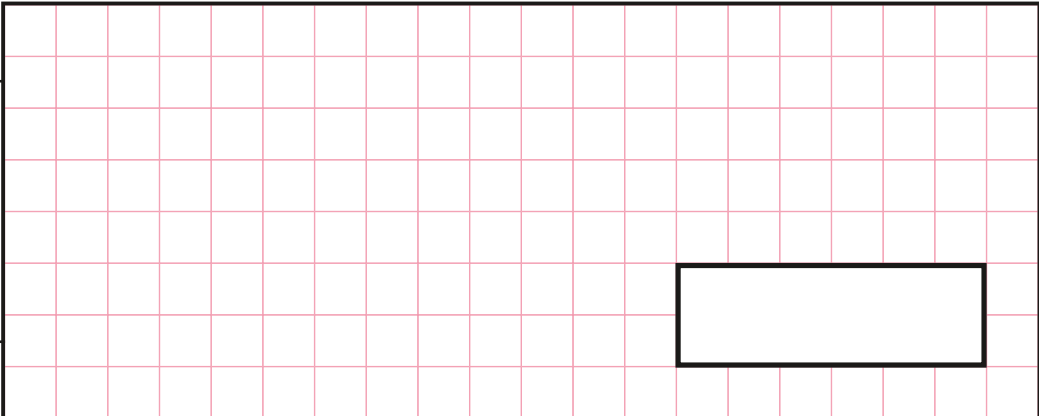
Work as quickly and as carefully as you can.

If you need to do working out, you can use the space around the question.

Do not write over any barcodes.

**Some questions have a method box like this:**

Show  
your  
method



For these questions, you may get a mark for showing your method.

If you cannot do a question, **go on to the next one**.

You can come back to it later, if you have time.

If you finish before the end, **go back and check your work**.

### Marks

The number under each line at the side of the page tells you the number of marks available for each question.



1

Write these numbers in order.

Start with the least.

1,505

1,050

1,005

1,500

least

1 mark

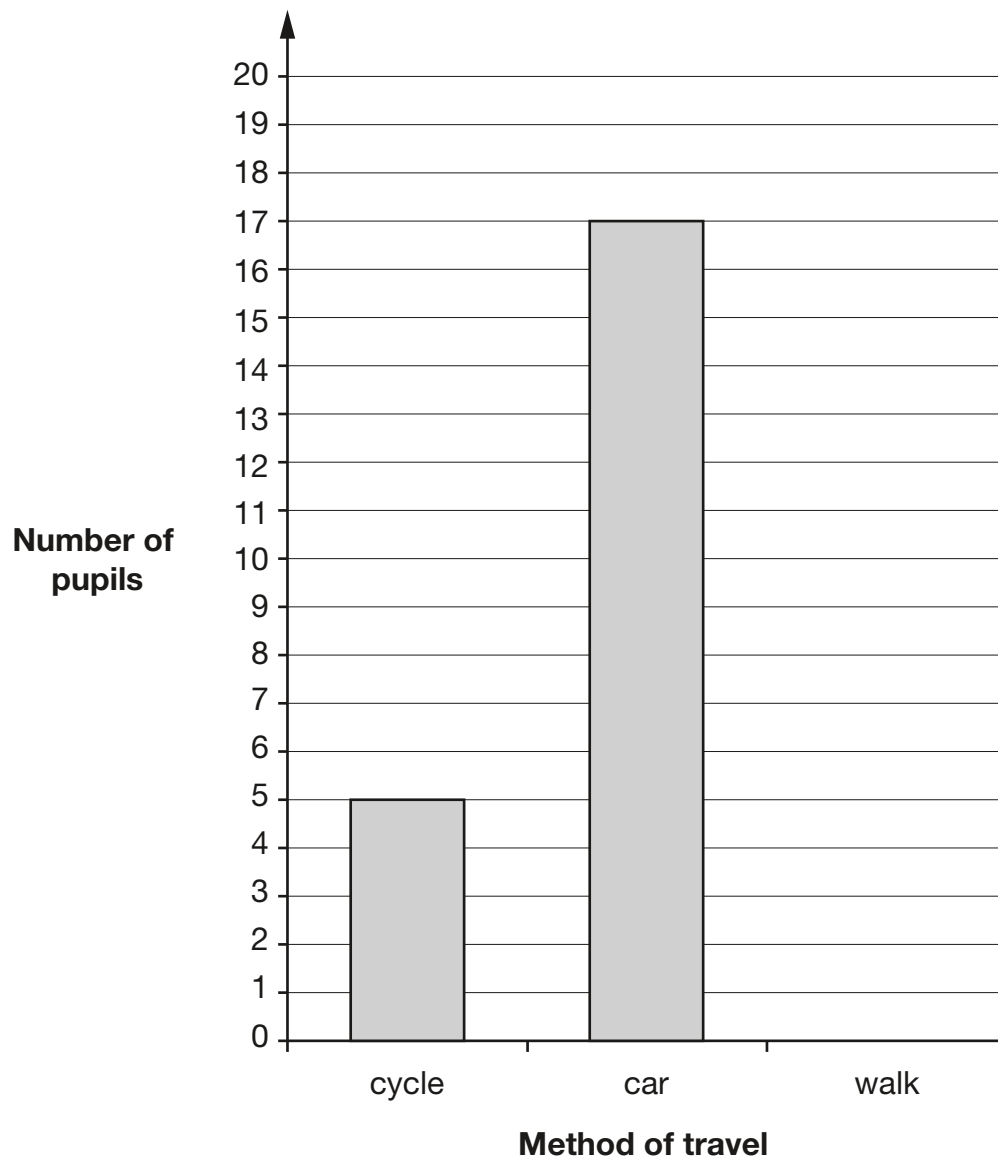


2

30 pupils were asked how they travelled to school.

Complete the graph to show how many children walk to school.

Use a ruler.



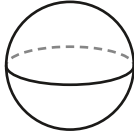
1 mark



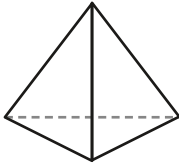
B 0 0 0 7 0 A 0 5 2 4

3

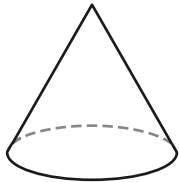
Match each shape to its name.



triangle-based pyramid



cylinder



sphere



triangular prism



cone

1 mark



4

This table shows the numbers of children in each year in a school.

One number is missing.

	Year 3	Year 4	Year 5	Year 6
Children	119		118	117

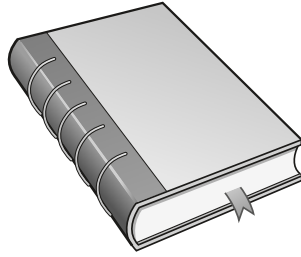
There are **468** children in the school altogether.

How many children are in Year 4?

1 mark



5



Jack buys a book for £11.79

He pays for the book with a £10 note and a £5 note.

How much **change** does he get?

£

1 mark

6

Ken has 14 comics.

Maria has one more comic than Ken.

Stefan has 3 times as many comics as Maria.



How many comics do Ken, Maria and Stefan have **altogether**?

Show  
your  
method

comics

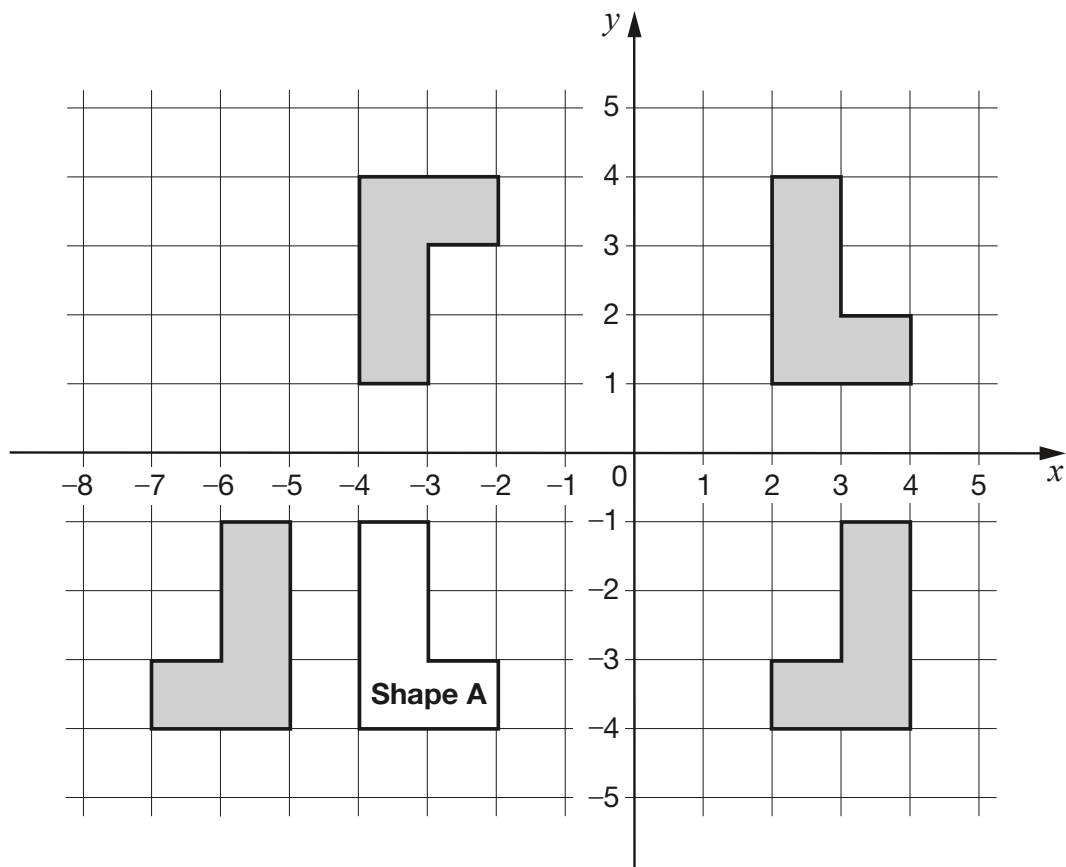
2 marks





7

This grid shows Shape A and four transformations of the shape.



Circle the transformation that is **not** a **reflection** of Shape A.

1 mark



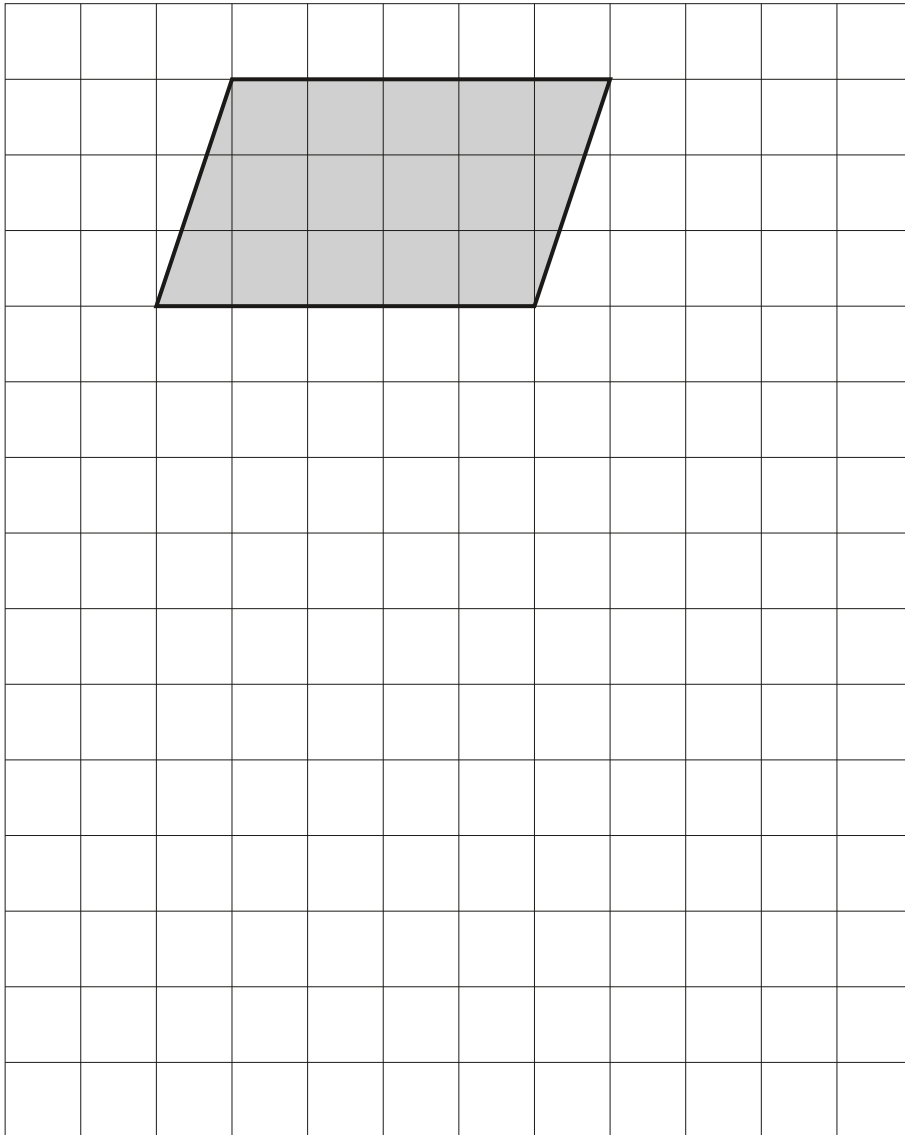
B 0 0 0 7 0 A 0 9 2 4

8

Here is a shaded parallelogram on a square grid.

Draw a **rectangle** on the grid that has the **same area** as the parallelogram.

Use a ruler.



1 mark



9

Here are some statements about multiples.

Tick the statements that are **true**.

All multiples of 9 are multiples of 6 ☐

All multiples of 20 are multiples of 10 ☐

All multiples of 5 are multiples of 10 ☐

All multiples of 10 are multiples of 5 ☐

1 mark

10

Amir makes a necklace with blue and red beads.

For every 5 blue beads there are 3 red beads.

There are 30 **blue** beads in the necklace.

What is the **total** number of beads in the necklace?

Show  
your  
method

2 marks

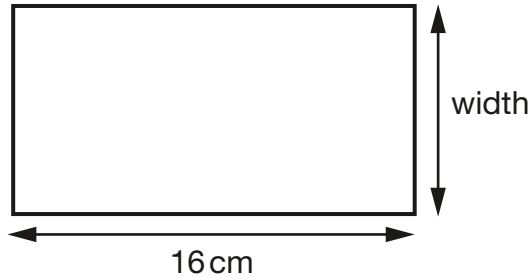


B 0 0 0 7 0 A 0 1 1 2 4

11

This rectangle has a length of 16 centimetres.

The **perimeter** of the rectangle is **50** centimetres.



**Not  
actual  
size**

What is the **width** of the rectangle?

cm

1 mark

12

Round **349,909**

to the nearest **10**

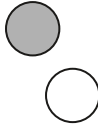
to the nearest **100**

to the nearest **1,000**

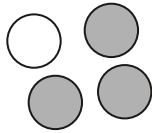
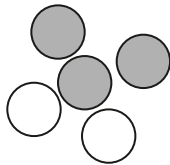
2 marks



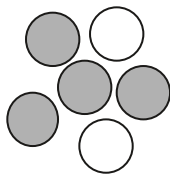
13

Draw lines to match each group to the proportion that is **shaded**.

0.6

 $\frac{2}{3}$ 

50%



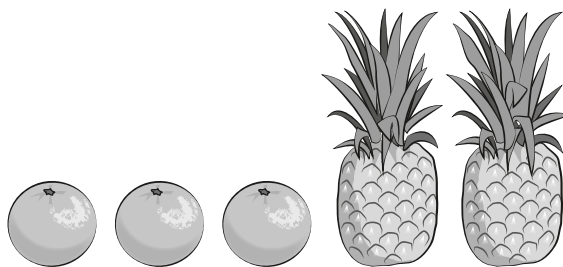
0.75

2 marks

B 0 0 0 7 0 A 0 1 3 2 4

14

**3 oranges and 2 pineapples cost £4.06 altogether.**



Oranges cost **36p** each.

What is the cost of **one** pineapple?

Show your method

£

2 marks



Write the missing numbers to make these divisions correct.

$$24 \div \boxed{\phantom{0000}} = 2.4$$

$$24 \div \boxed{\phantom{0000}} = 1.2$$

$$2.4 \div \boxed{\phantom{0000}} = 1.2$$

2 marks



16

Circle the fractions that are **less than**  $\frac{2}{3}$

$\frac{5}{9}$

$\frac{4}{9}$

$\frac{7}{9}$

$\frac{8}{9}$

$\frac{3}{9}$

1 mark

Circle the fractions that are **greater than**  $\frac{2}{5}$

$\frac{5}{8}$

$\frac{3}{8}$

$\frac{2}{8}$

$\frac{6}{8}$

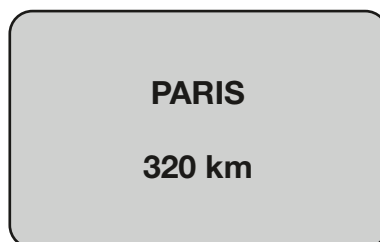
$\frac{4}{8}$

1 mark

17

Amina is on holiday in France.

She sees this road sign.



How many **miles** does Amina need to travel to get to Paris?

Use the conversion: **5 miles = 8 kilometres**

miles

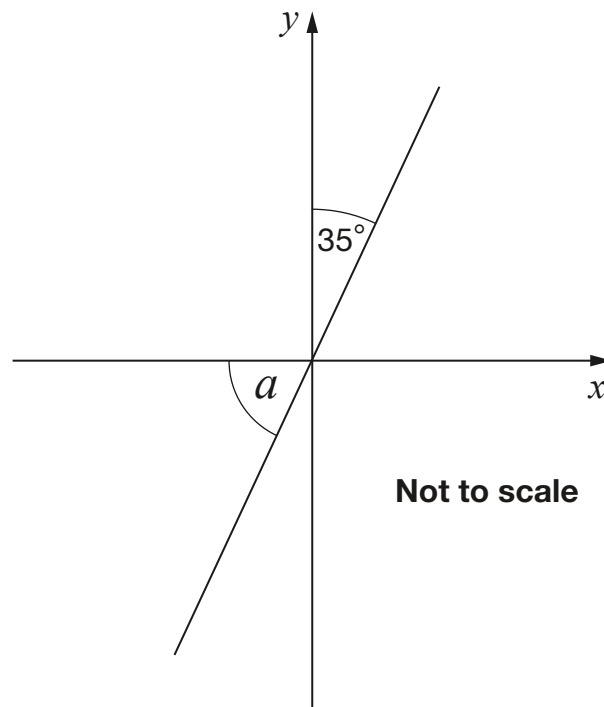
1 mark





18

A line makes an angle with the  $x$ -axis as shown.



Calculate the size of angle  $a$ .

$a$  is

1 mark



19

Megan buys 6 cans of beans.

The total mass of the cans is 2.49 kilograms.

What is the mass of one can, in **grams**?

Show  
your  
method

A grid for showing the method to solve the problem. The grid is 20 squares wide and 10 squares high. A small box labeled 'g' is located in the bottom right corner of the grid.

2 marks



**20**

Mabel has some 5p and 2p coins.

She has a total of 41p.

Complete the table to show how many of each type of coin she could have.

One row has been done for you.

5p	2p
1	18

2 marks



21

Kirsty mixes blue paint and yellow paint.

$\frac{2}{5}$  of her mixture is blue paint.

She uses **3.5** litres of blue paint.

How many litres of **yellow** paint does Kirsty use?

Show  
your  
method

litres

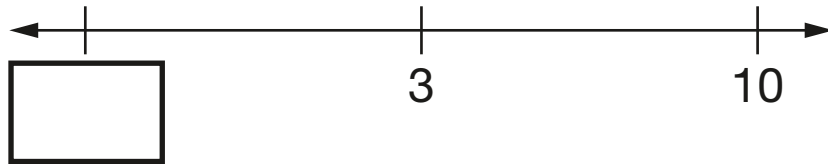
2 marks



22

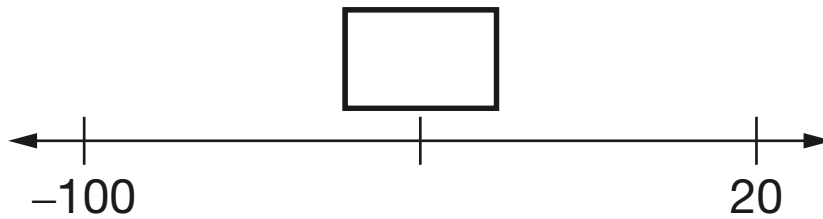
On this number line, 3 is **halfway** between the missing number and 10

Write the missing number.



1 mark

What number is **halfway** between 20 and  $-100$ ?



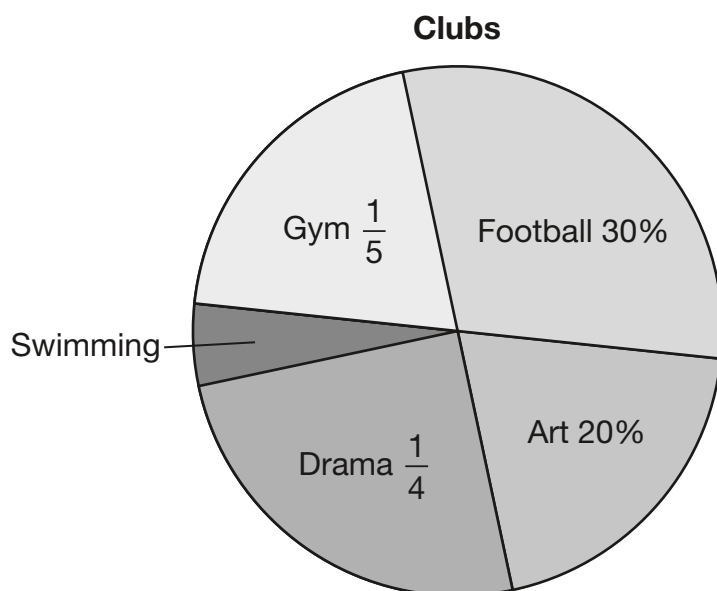
1 mark



23

William asked some children to choose their favourite club.

The pie chart shows the results.



**Three** children chose swimming.

How many children did William ask **altogether**?

Show  
your  
method

children

2 marks



**[END OF TEST]**

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Standards  
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Agency

Key stage 2 mathematics Paper 2: reasoning

Print version product code: STA/26/9018/p ISBN: 978-1-83507-367-4

Electronic PDF version product code: STA/26/9018/e ISBN: 978-1-83507-469-5

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B 0 0 0 7 0 A 0 2 4 2 4