

2017 national curriculum tests

# Key stage 2

## Mathematics

### Paper 2: reasoning

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



F 0 0 0 7 0 A 0 1 2 4

**[BLANK PAGE]**

Please do not write on this page.



## 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

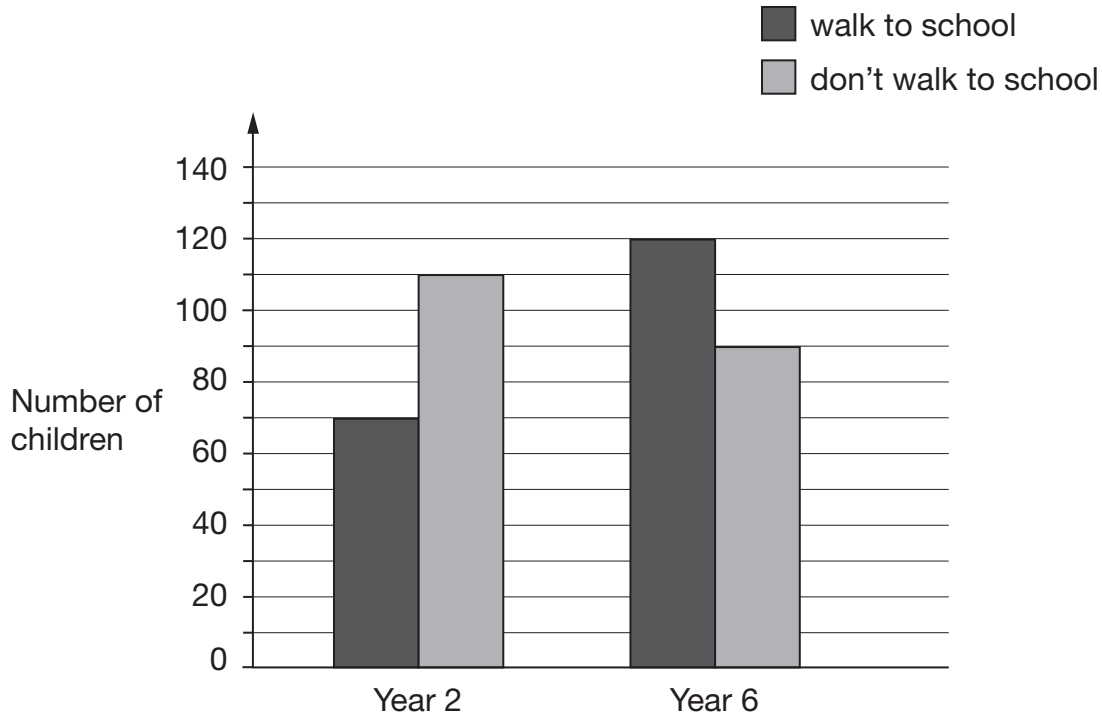
The number under each line at the side of the page tells you the maximum number of marks for each question.



1

William asks the children in Year 2 and Year 6 if they walk to school.

This graph shows the results.



Altogether, how many children **don't** walk to school?

1 mark

How many **more** Year 6 children than Year 2 children walk to school?

1 mark



2

Circle the number that is **10 times** greater than nine hundred and seven.

9,700

907

9,007

970

9,070

1 mark

3

Write the missing numbers to make this **multiplication** grid correct.

	×	<input type="text"/>	<input type="text"/>
<input type="text"/>	9	63	54
<input type="text"/>		56	48

1 mark



4

This table shows the heights of three mountains.

Mountain	Height in metres
Mount Everest	8,848
Mount Kilimanjaro	5,895
Ben Nevis	1,344

How much higher is Mount Everest than the combined height of the other two mountains?

Show  
your  
method

m

2 marks



**5**

Complete this table with the missing numbers.

One row has been done for you.

Number	1,000 more
3,500	4,500
85	
	9,099
	15,250

2 marks

F 0 0 0 7 0 A 0 7 2 4

**6**Write these numbers in order of size, starting with the **smallest**.

1.9

0.96

1.253

0.328

**smallest**1 mark**7**

Write the missing numbers.

60 months =

years

72 hours =

days

84 days =

weeks

2 marks



8

At the start of June, there were 1,793 toy cars in the shop.

During June,

- 8,728 more toy cars were delivered
- 9,473 toy cars were sold.

How many toy cars were left in the shop at the end of June?

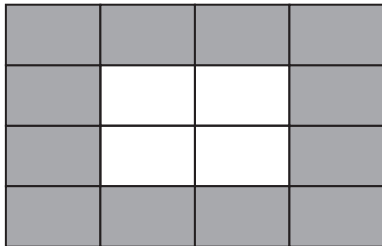
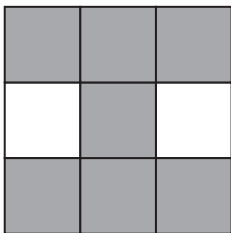
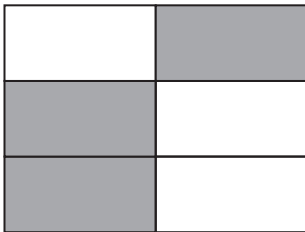
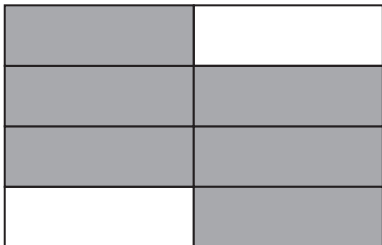
Show  
your  
method

2 marks



9

Tick two shapes that have  $\frac{3}{4}$  shaded.



1 mark



**10**Round **84,516**

to the nearest 10

to the nearest 100

to the nearest 1,000

2 marks

F 0 0 0 7 0 A 0 1 1 2 4

**11**

Here is a rule for the time it takes to cook a chicken.

**Cooking time = 20 minutes plus an extra  
40 minutes for each kilogram**

How many minutes will it take to cook a 3 kg chicken?

minutes

1 mark

What is the mass of a chicken that takes 100 minutes to cook?

kg

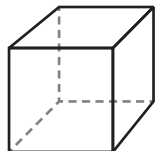
1 mark



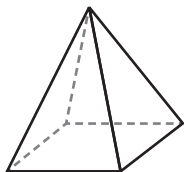
12

Here are diagrams of some 3-D shapes.

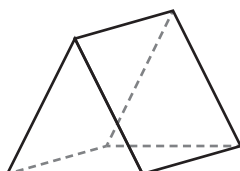
Tick each shape that has the same number of faces as vertices.



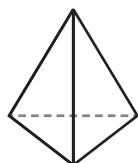
Cube

☐

Square-based pyramid

☐

Triangular prism

☐

Triangular-based pyramid

☐

2 marks



F 0 0 0 7 0 A 0 1 3 2 4

**13**

Ally and Jack buy some stickers.



**Pack of 12 stickers**  
**£10.49**



**12 stickers**  
**99p each**

Ally buys a pack of 12 stickers for £10.49

Jack buys 12 single stickers for 99p each.

How much more does Jack pay than Ally?

Show  
your  
method

£

2 marks



14

Amina planted some seeds.

For every 3 seeds Amina planted, only 2 seeds grew.

Altogether, 12 seeds grew.

How many seeds did Amina **plant**?

1 mark

15

At the end of a film, the year is given in Roman numerals.



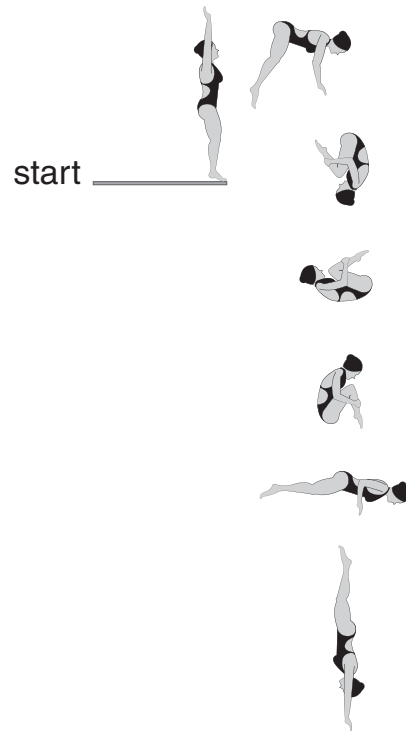
Write the year MMVI in **figures**.

1 mark



16

Layla completes one-and-a-half somersaults in a dive.



How many **degrees** does Layla turn through in her dive?

1 mark





**17**

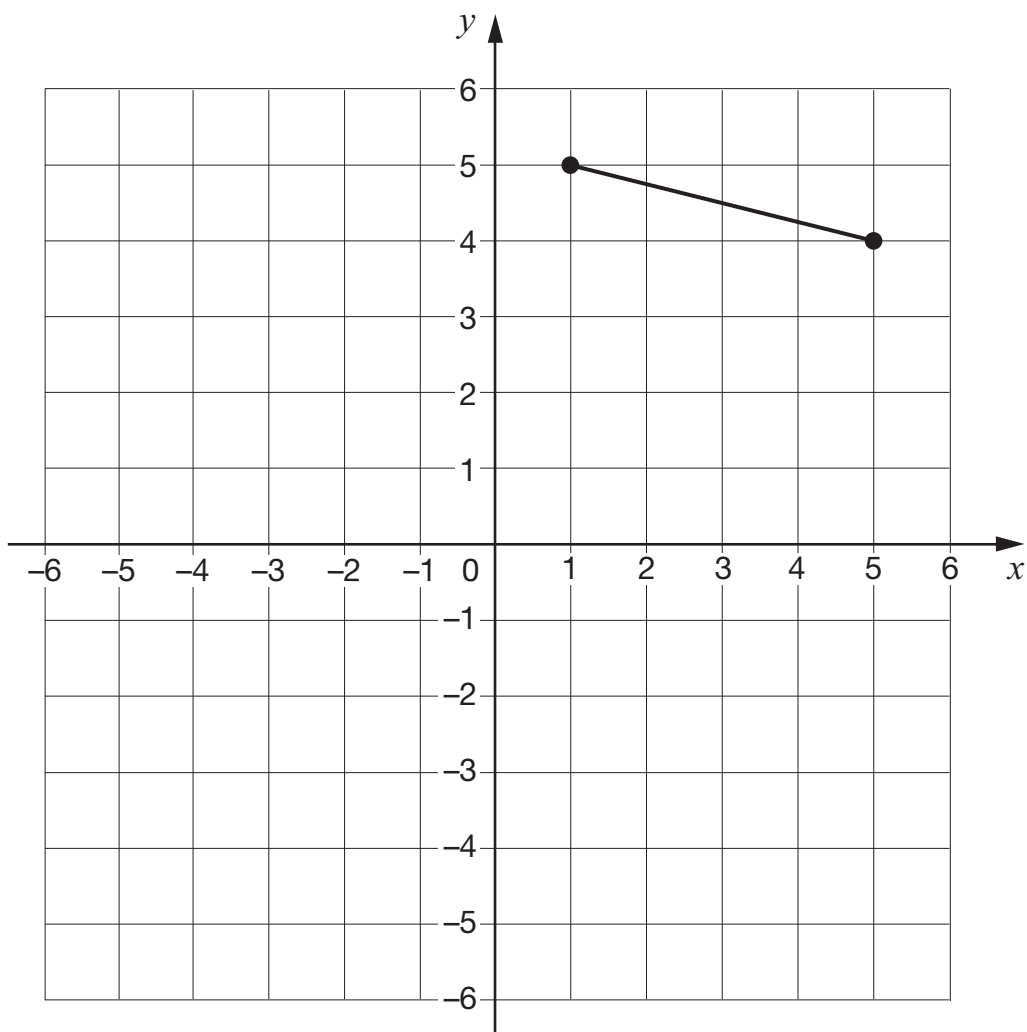
The vertices of a quadrilateral have these coordinates.

$(1, 5)$        $(5, 4)$        $(1, -3)$        $(-3, 4)$

One side of the quadrilateral has been drawn on the grid.

Complete the quadrilateral.

Use a ruler.



1 mark



F 0 0 0 7 0 A 0 1 7 2 4

**18**

A cat sleeps for **12 hours** each day.

**50%** of its life is spent asleep.



Write the missing percentage.

A koala sleeps for **18 hours** each day.

%

of its life is spent asleep.



1 mark



**19**

Amina posts three large letters.

The postage costs the same for each letter.

She pays with a £20 note.

Her change is £14.96

What is the cost of posting **one** letter?

Show  
your  
method

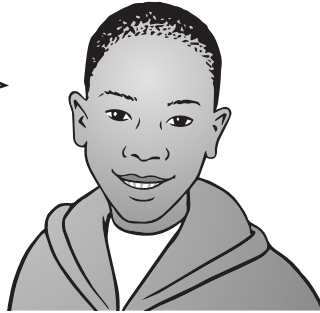
2 marks



20

Adam says,

0.25 is **smaller** than  $\frac{2}{5}$



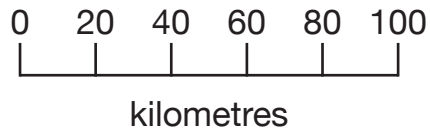
Explain why he is correct.

1 mark



**21**

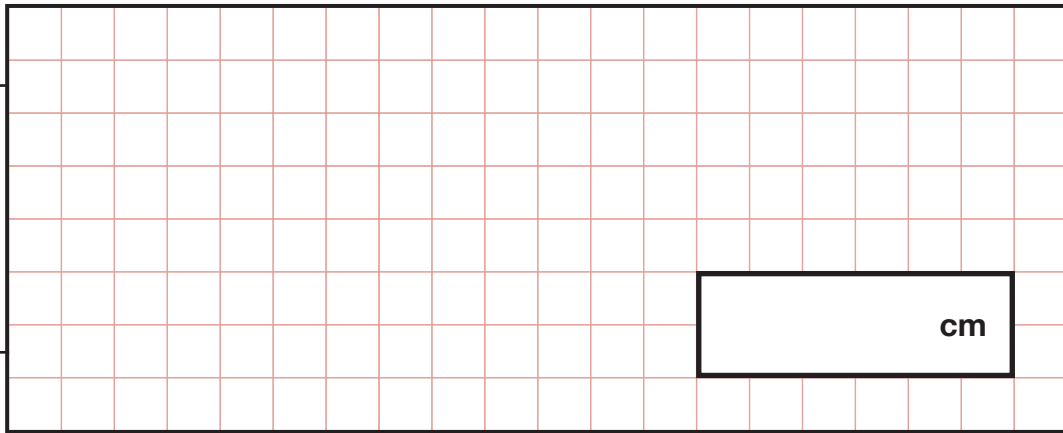
On a map, 1 cm represents 20 km.



The distance between two cities is **250 km**.

On the map, what is the distance between the two cities?

Show  
your  
method

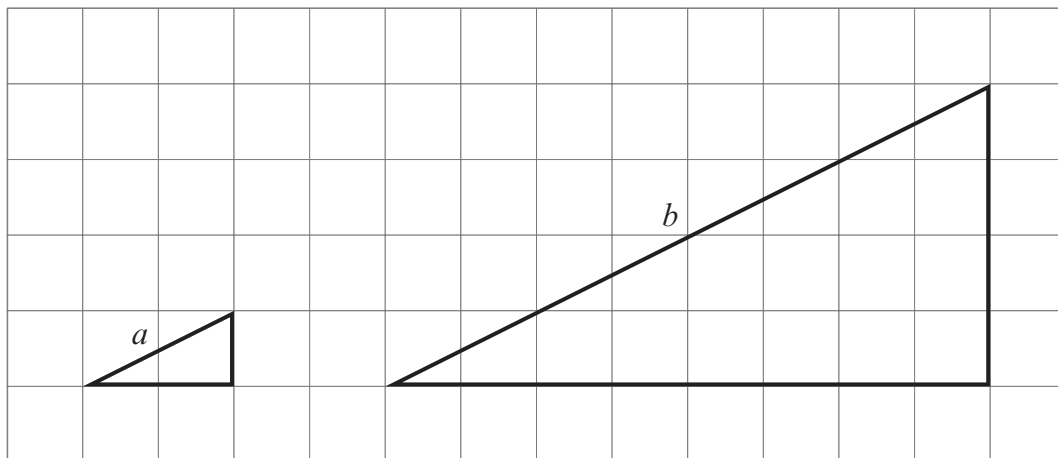


2 marks



22

Here are two similar right-angled triangles.



Write the ratio of side  $a$  to side  $b$ .

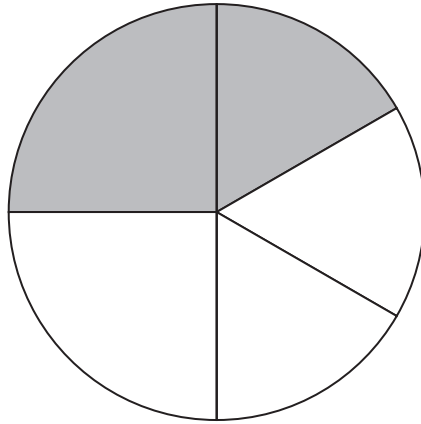
$$a:b = \boxed{\phantom{000}} : \boxed{\phantom{000}}$$

1 mark



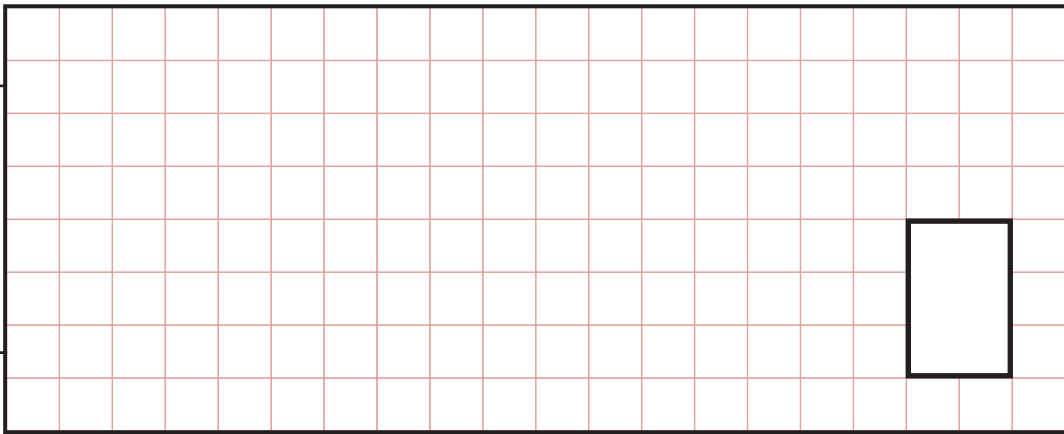
**23**

In this circle,  $\frac{1}{4}$  and  $\frac{1}{6}$  are shaded.



What fraction of the whole circle is **not** shaded?

Show  
your  
method



2 marks





Standards  
& Testing  
Agency

2017 key stage 2 mathematics

Paper 2: reasoning

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