

National Curriculum Tests

Key Stage 2

Mathematics

Paper 2: Reasoning

First Name						
Middle Name						
Last Name						
Date of Birth	Day		Month		Year	
School Name						

Published October 2017

Instructions

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

Questions and answers

You have **40 minutes** to complete the 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.

Some questions have a method box like this:

[illegible]

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

If you cannot do one of the questions, **go on to the next one.**

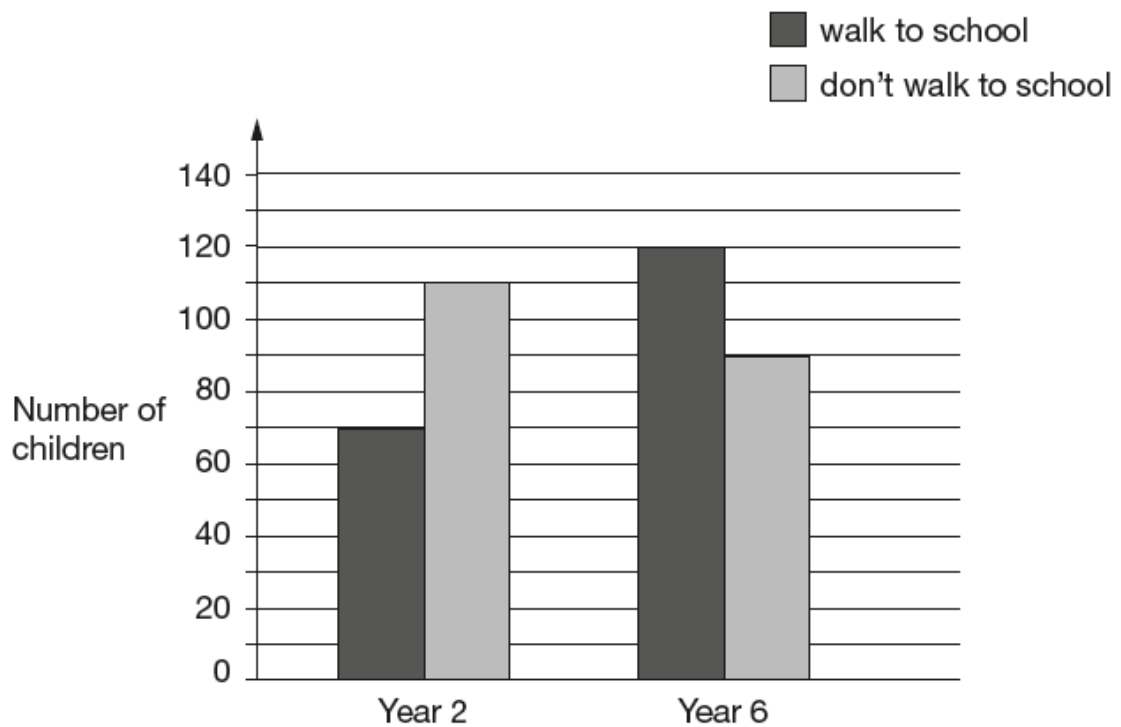
You can come back to it later, if you have time.

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

Marks

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

1. Tom asks the children in Year 2 and Year 6 if they walk to school. The graph shows the results.



Altogether, how many children walk to school?

1 mark

How many **more** Year 2 children than Year 6 children **don't** walk to school?

1 mark

2.

Circle the number that is **10 times** larger than eight hundred and five

805

8,005

8,050

8,500

80,005

1 mark

3.

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

	<input type="text"/>	<input type="text"/>
X		
<input type="text"/>	84	56
9	108	72

1 mark

4. This table shows the heights of three mountains

Mountain	Height in metres
Kangchenju	8,586
Bogda Feng	5,445
Snowden	1,085

How much higher is Mount Kangchenju 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
2,700	3,700
73	
	8,088
	17,670

2 marks

6.

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

2.3

0.32

1.745

0.218

smallest

1 mark

Write the missing numbers.

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2 marks

- 6,868 more toy cars were delivered
- 8,467 toy cars were sold.

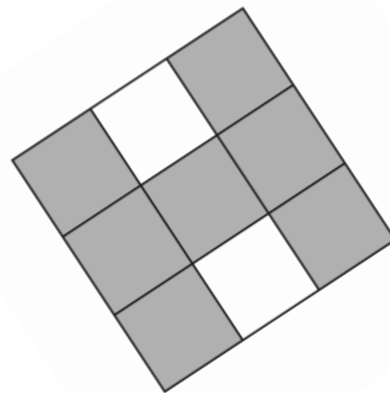
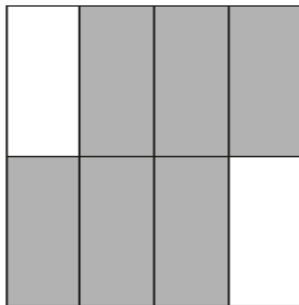
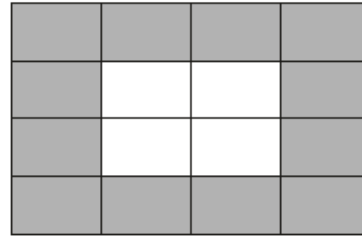
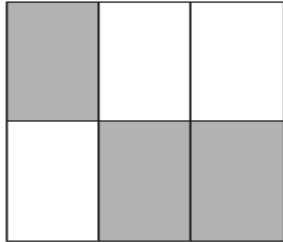
How many toy cars were left in the shop at the end of July?

A full-page view of a blank sheet of graph paper. The grid consists of light red horizontal and vertical lines forming small squares. A thick black rectangular box is drawn on the right side of the page, spanning approximately from the middle to the bottom edge. On the far left edge, there are two short vertical black line segments, one near the top and one near the bottom, which appear to be part of a binding or margin indicator.

2 marks

9.

Tick two shapes that **do not** have three quarters shaded.



2 marks

10.

Round **56,436**

to the nearest 10

to the nearest 100

to the nearest 1,000

2 marks

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

**Cooking time = 35 minutes plus an extra
50 minutes for each kilogram**

How many minutes will it take to cook a 4kg turkey?

minutes

1 mark

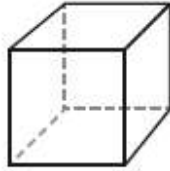
What is the mass of a turkey that takes 185 minutes to cook?

kg

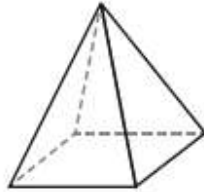
1 mark

12. Here are diagrams of some 3-D shapes

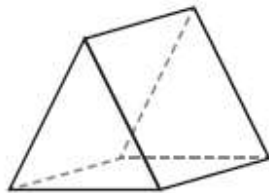
Tick each shape that have 3 more edges than vertices.



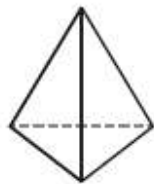
Cube

☐

Square-based pyramid

☐

Triangular prism

☐

Triangular-based pyramid

☐

2 marks

13. Tom and Karen buy some stickers.



Single stickers

89p each



Pack of 12 stickers

£9.59

Tom buys a pack of 12 stickers for £9.59

Karen buys 12 single stickers for 89p each

How much more does Karen pay than Tom?

Show
your
method

£

2 marks

14. Karen planted some seeds.
For every 4 seeds that Karen planted, only 3 seeds grew.
Altogether, 18 seeds grew.

How many seeds did Karen **plant**?

1 mark

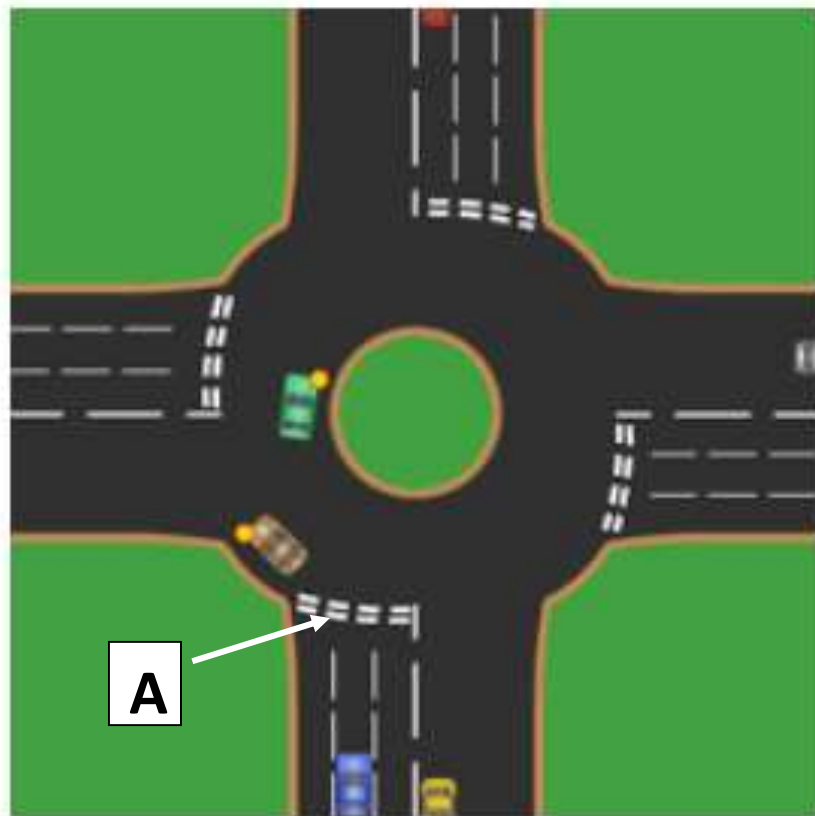
15. At the end of a TV programme, the year is given in Roman numerals.

MMIX

Write the year MMIX in **figures**.

1 mark

16. A car goes around a roundabout one and a half times starting at A.



How many **degrees** does it turn through?

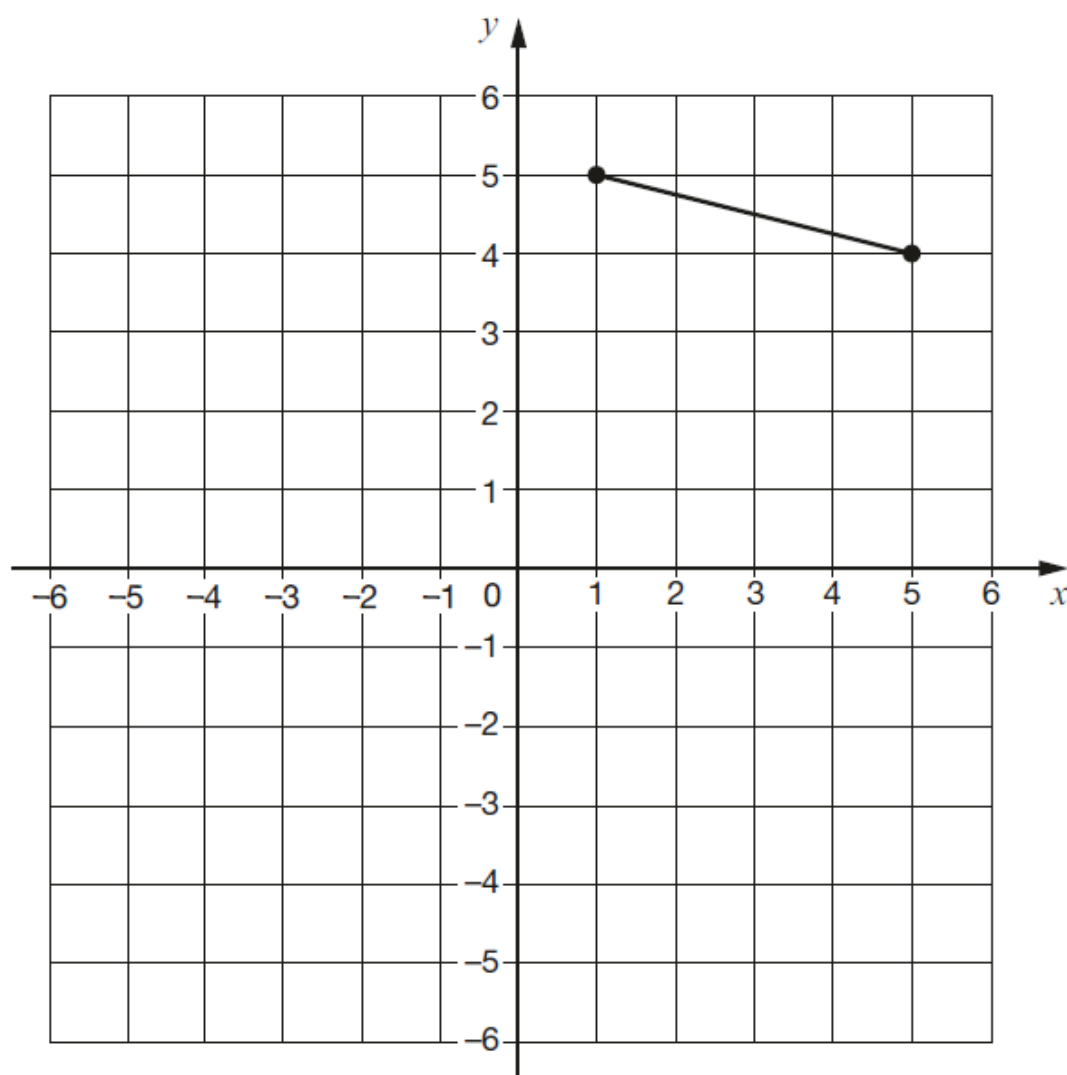
1 mark

17. The vertices of a quadrilateral have these coordinates.

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

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

Complete the quadrilateral.



1 mark

18. Chen has a £50 to spend on food. He spends £12 on fruit.

24% of his money was spent on fruit.

Write the missing percentage.

Tracey also has £50 to spend on food. She spends £15 on fruit.

%

of Tracey's money was spent on fruit.

1 mark

19. Tom posts three large letters.

The postage costs the same for each letter.

He pays with a £20 note.

His change is £14.36

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

Show
your
method

£

2 marks

20. Karen says,



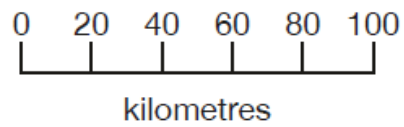
0.34 is **smaller** than $\frac{3}{4}$

Explain why she is correct.

A large, empty, cloud-shaped outline intended for the student to write their explanation.

1 mark

21. On a map, 1 cm represents 20km.



The distance between two cities is **330km**

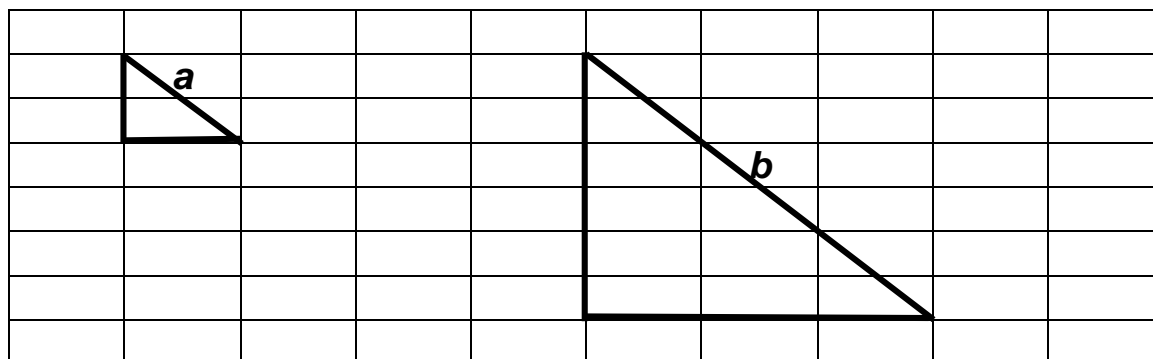
On the map, what is the distance between the two cities?

Show
your
method

cm

2 marks

22. Here are two similar right angled triangles.

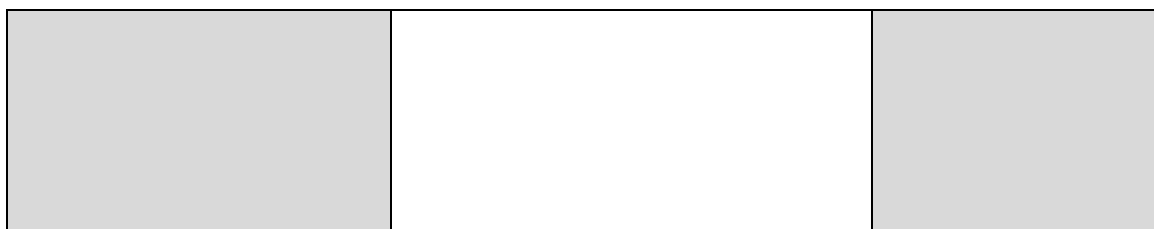


Write the ratio of side a to side b.

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

1 mark

23. In this rectangle $\frac{1}{3}$ & $\frac{1}{4}$ are shaded.



What fraction of the rectangle is **not** shaded?



2 marks