2025 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						

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Instructions

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

Questions and answers

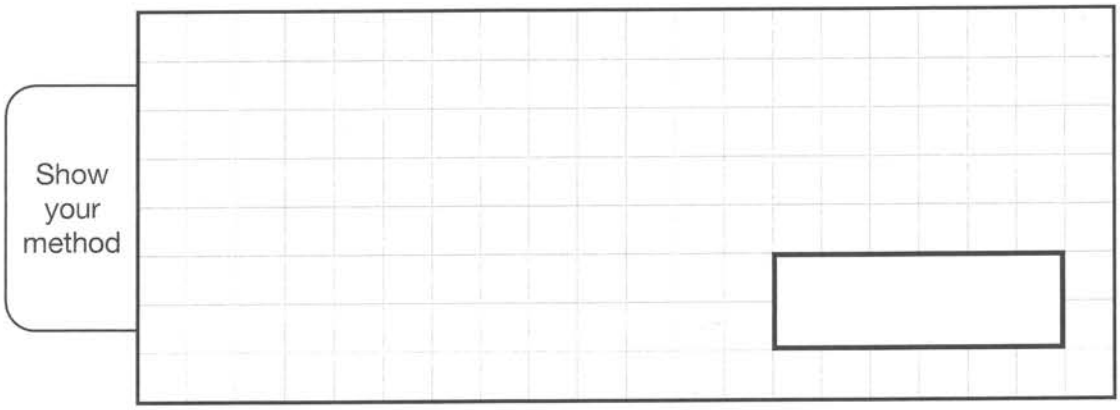
You have **40 minutes** to complete this test.

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:



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

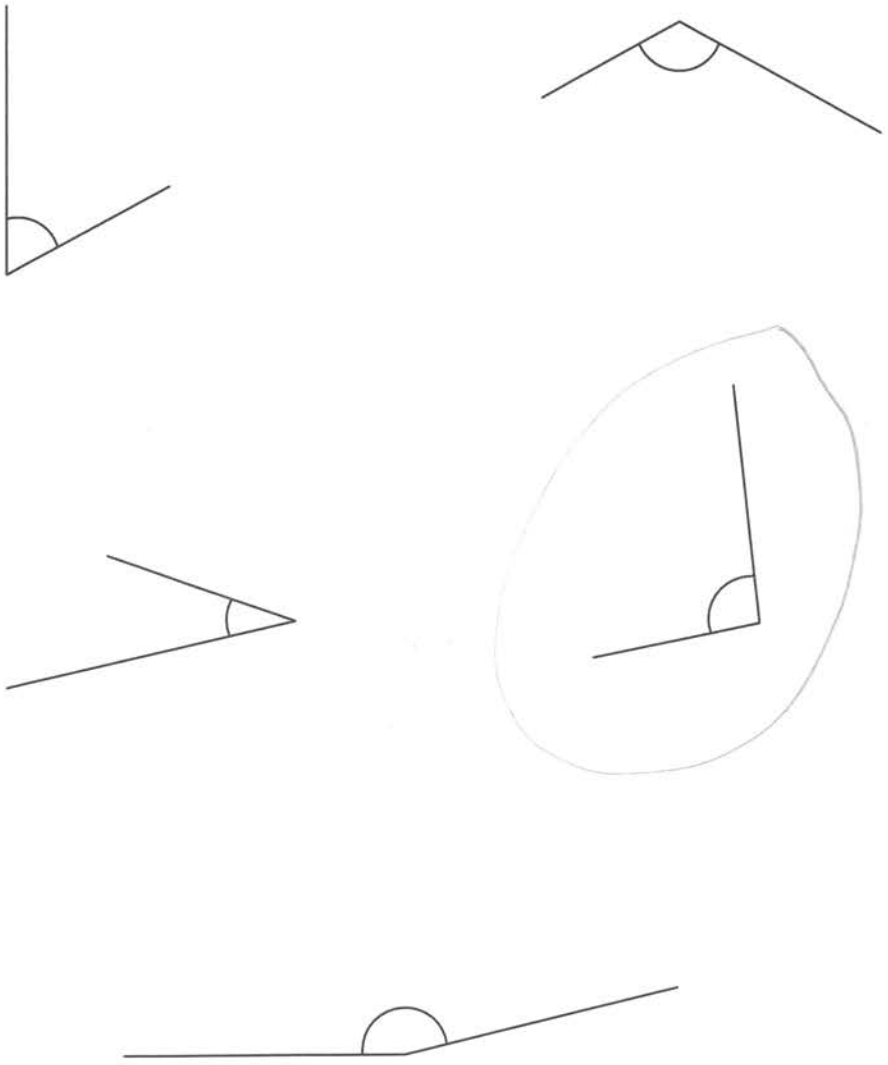
If you cannot do a question, **go on to the next one**.
You can come back to it later, if you have time.

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

Marks

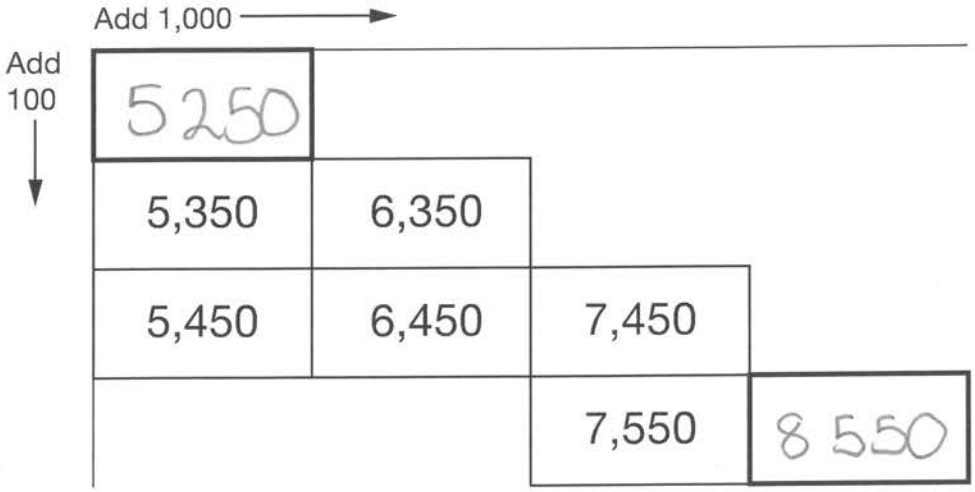
The number under each line at the side of the page tells you the number of marks available for each question.

1 Circle the angle that is closest in size to a **right angle**.



1 mark

2 Write the two missing numbers.



1 mark

1 mark

3

Layla's money

Adam's money

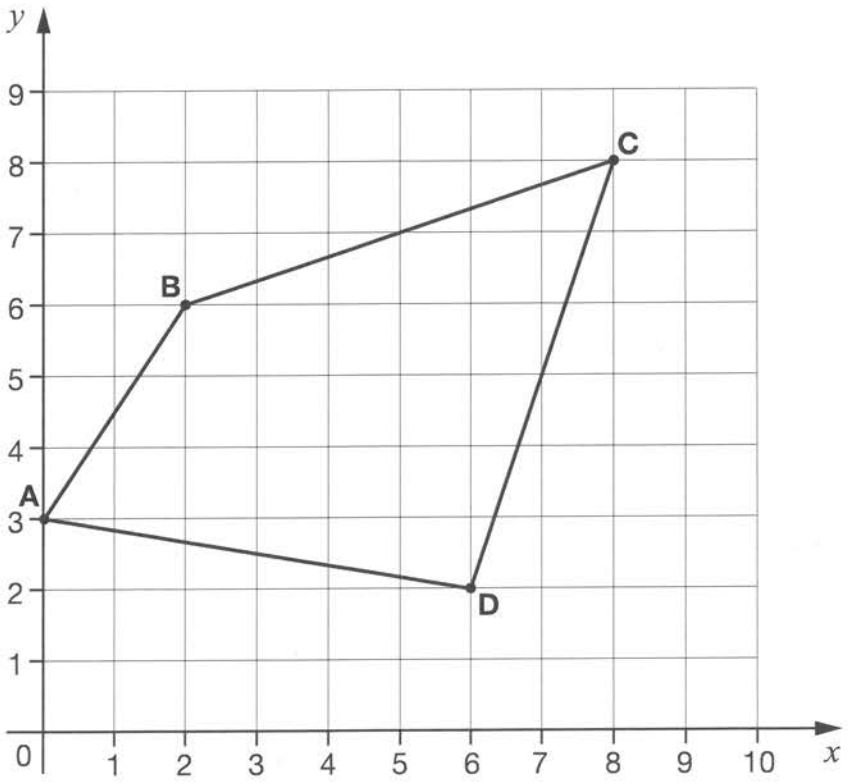
How much **more** money does Layla have than Adam?

80p

1 mark

1
£2'00
-£1 20
£0 80

4



Match each point to its coordinates.

x then y

A	(6, 2)
B	(2, 6)
C	(0, 3)
D	(8, 8)

1 mark

5 Olivia counts in eights, starting at zero.

Tick **all** the numbers Olivia should say.

24 ☑

42 ☐

78 ☐

112 ☑

1 mark

6

HTh TTh Th H T O

5,639,728

Which digit is in the **hundred thousands** place?

6

1 mark

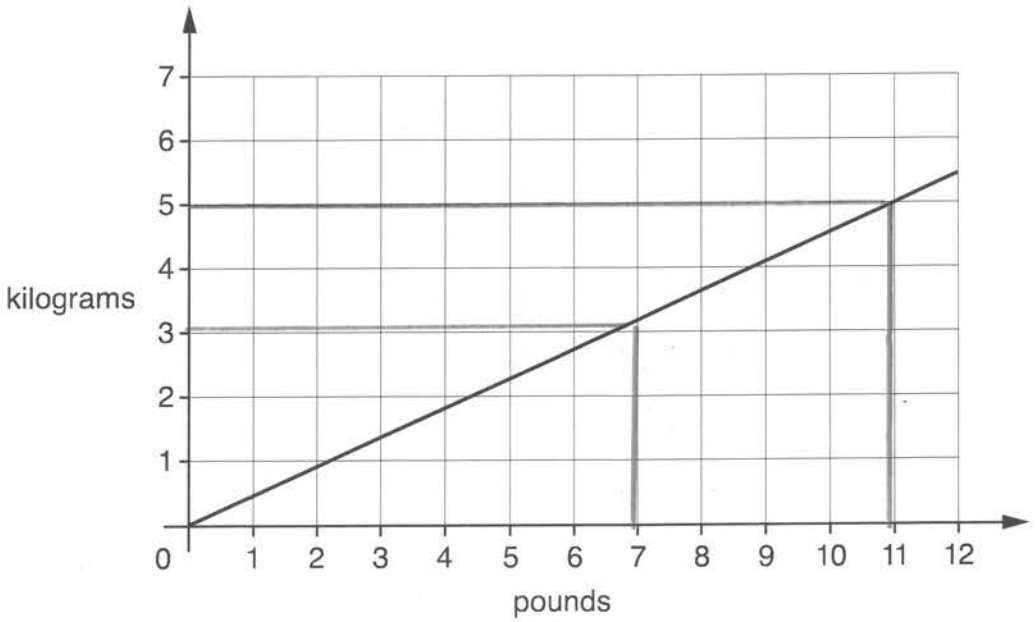
What is **two thousand more** than 5,639,728?

5639728
+ 2000
5641728

5641728

1 mark

7 Here is a graph for converting kilograms and pounds.



Use the graph to convert 5 kilograms to pounds.

11 **pounds**

1 mark

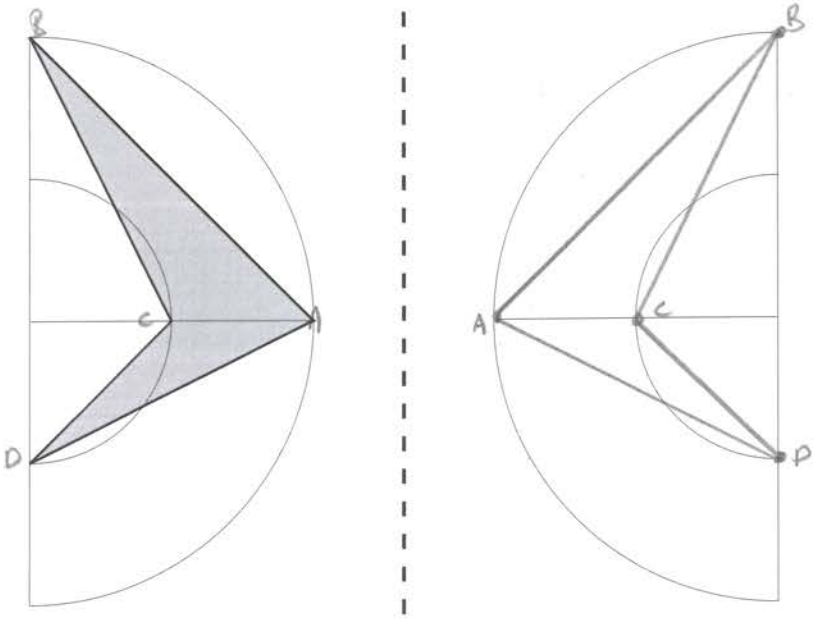
Use the graph to convert 7 pounds to the **nearest** kilogram.

3 **kg**

1 mark

8 Draw the reflection of the shaded shape about the mirror line.

Use a ruler.



1 mark

9 Ali has 35 red counters.

He divides them into groups of 3

What is the **greatest** number of groups of 3 he can make?

3 6 9 12 15 18 21
24 27 30 33 36

11

1 mark

Maria has 35 green counters.

She divides them into groups of 4

How many green counters does she have **left over**?

8 x 4 = 32 35 - 32 = 3

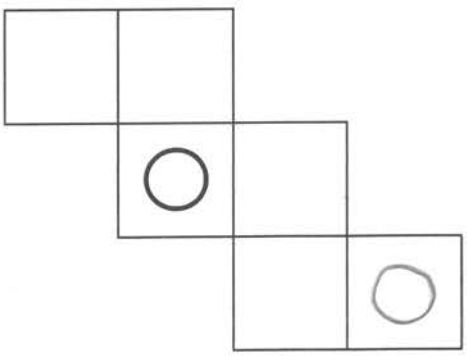
3

1 mark

10 Olivia is making a cube from a net.

She wants the cube to have two circles on opposite faces.

Draw **one circle** to complete Olivia's net.



1 mark

11 The total distance from Paris to Munich by road is **860 kilometres**.

There are three sections.

The distances for the first two sections are shown.

How many kilometres is the last section from Stuttgart to Munich?

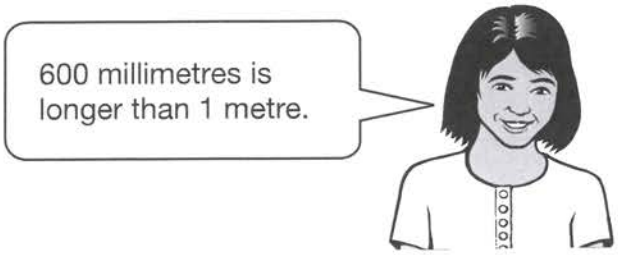
Show your method

$$\begin{array}{r} {}^{5}\cancel{8}{}^{1}0 \\ -\ 331 \\ \hline 529 \end{array} \qquad \begin{array}{r} {}^{4}\cancel{5}{}^{1}29 \\ -\ 295 \\ \hline 234 \end{array}$$

234 km

2 marks

12 Amina says,



Amina is **not** correct.

Explain how you know.

Amina is not correct because 1 metre is 1000mm and 600mm is less than 1000 mm.

1 mark

13 Jack buys **four** concert tickets. Each ticket costs **£28**

Tick each calculation that Jack could use to work out the total cost.

One has been done for you.

$28 + 28 + 28 + 28$	✓
$(20 \times 4) + (8 \times 4)$	✓
$(4 \times 20) + 8$	
$(4 \times 30) - (4 \times 2)$	✓
$(4 \times 30) - 2$	

2 marks

14 This table shows the distances Kirsty cycled last week.

Day	Home to school (4.3 miles)	School to home (4.3 miles)	School to tennis (2.6 miles)	Tennis to home (3.1 miles)
Monday	✓	✓	–	–
Tuesday	✓	✓	–	–
Wednesday	✓	–	✓	✓
Thursday	✓	✓	–	–
Friday	✓	–	✓	✓

What is the total distance Kirsty cycled last week?

Show your method

$4.3 \times 8 = 34.4$ (2)

$2.6 \times 2 = 5.2$ (1)

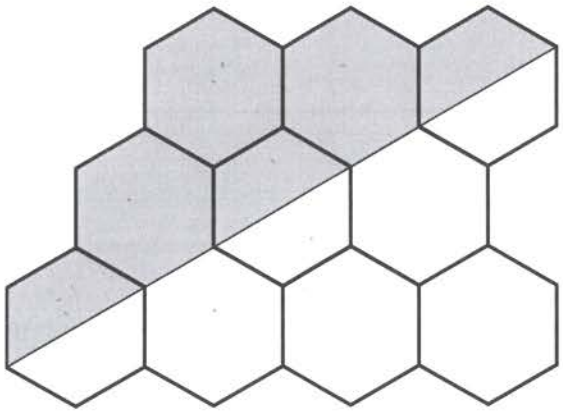
$3.1 \times 2 = 6.2$

$34.4 + 5.2 + 6.2 = 45.8$ (1)

45.8 miles

2 marks

15 Here is a diagram made from regular hexagons.



$4\frac{1}{2}$ out of 10

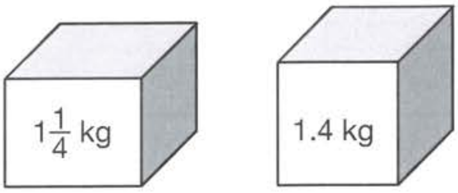
$4.5 \times 10 = 45$

What **percentage** of the diagram is shaded?

45 %

1 mark

16 Here are two boxes.



The mass of the first box is $\mathbf{1\frac{1}{4}}$ kilograms.

The mass of the second box is **1.4** kilograms.

What is the **difference** in mass of the two boxes?

Give your answer in kilograms.

Show your method

$1\frac{1}{4} = 1.25$

$1.40 - 1.25 = 0.15$

0.15 kg

2 marks

17 A 4 kilogram bag of rice costs £6

What is the cost of 500 grams of the rice?

1.50 per Kg
4 | 6 ²0 0

0.75 per 500g
2 | 1 . ¹5 ¹0

£0·75

1 mark

18 Tick the fractions that are **greater than** $\frac{2}{3}$

$\frac{2}{3}$ $\frac{4}{6}$ $\frac{6}{9}$ $\frac{8}{12}$ $\frac{10}{15}$ $\frac{14}{21}$

$\frac{5}{6}$ ☑

$\frac{4}{9}$ ☐

$\frac{9}{12}$ ☑

$\frac{11}{15}$ ☑

$\frac{10}{21}$ ☐

2 marks

N 0 0 0 7 0 A 0 1 8 2 4

19 The **total** cost of a school trip for 12 pupils is £780

The total cost includes travel, food and hotel.

For **one** pupil, the travel cost is £27 and the food cost is £16

How much is the hotel cost for **one** pupil?

Show your method

$$\begin{array}{r} 65 \\ 12\overline{)780} \end{array}$$

$$\begin{array}{r} 27 \\ +\ 16 \\ \hline 43 \end{array}$$

$$\begin{array}{r} 65 \\ -\ 43 \\ \hline 22 \end{array}$$

£ 22

2 marks

20 Sophie thinks of **two prime numbers**.

She adds them together.

Her answer is **24** 2 3 5 7 11 13 17 19

Write **all** of the different pairs of prime numbers that Sophie could think of.

11	and	13	
19	and	5	
17	and	7	

2 marks

21 The mass of a **1p** coin is 3.56 g

The mass of a **10p** coin is 6.5 g

What is the **difference** in mass between £1 in 1p coins and £1 in 10p coins?

Show your method

$3.56 \times 100 = 356$

$6.5 \times 10 = 65$

$356 - 65 = 291$

291 g

2 marks

22 Calculate the **volume** of this cuboid.

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

$3 \times 12 = 36$

36 **cm³**

1 mark

23

Not to scale

The distance from A to B is $\frac{3}{4}$ of the distance from A to C.

What is the distance from **B** to **C**?

$3\overline{)24}$ $\quad \frac{1}{4} = 8$

8 **km**

1 mark

[END OF TEST]

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Standards & Testing Agency

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