2025 national curriculum tests

Key stage 2

Mathematics

Paper 3: 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

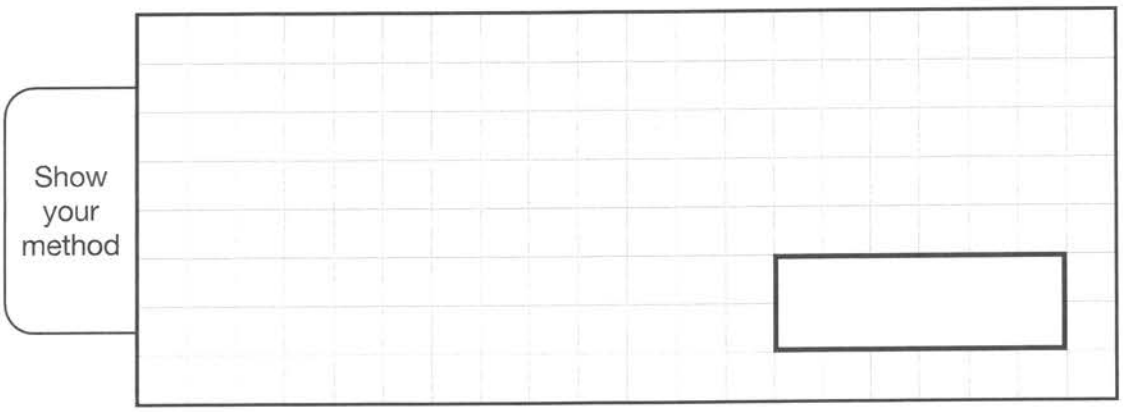
You have **40 minutes** to complete this test.

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 numbers that have **8** in the thousands place.

84,623 28,436 683,052

8,325 608,231

1 mark

2 Tick **all** the numbers that are less than one million and fifty thousand.

1 050 000

1,400,000 ☐

1,049,900 ☑

1,060,000 ☐

1,030,900 ☑

1 mark

3 There were 15,961 people at a football game.

Round this number to the nearest hundred.

H

15961

16000

1 mark

4 Jack buys 2 kilograms of pears.

He spends £3.28

What is the cost of **one** kilogram of pears?

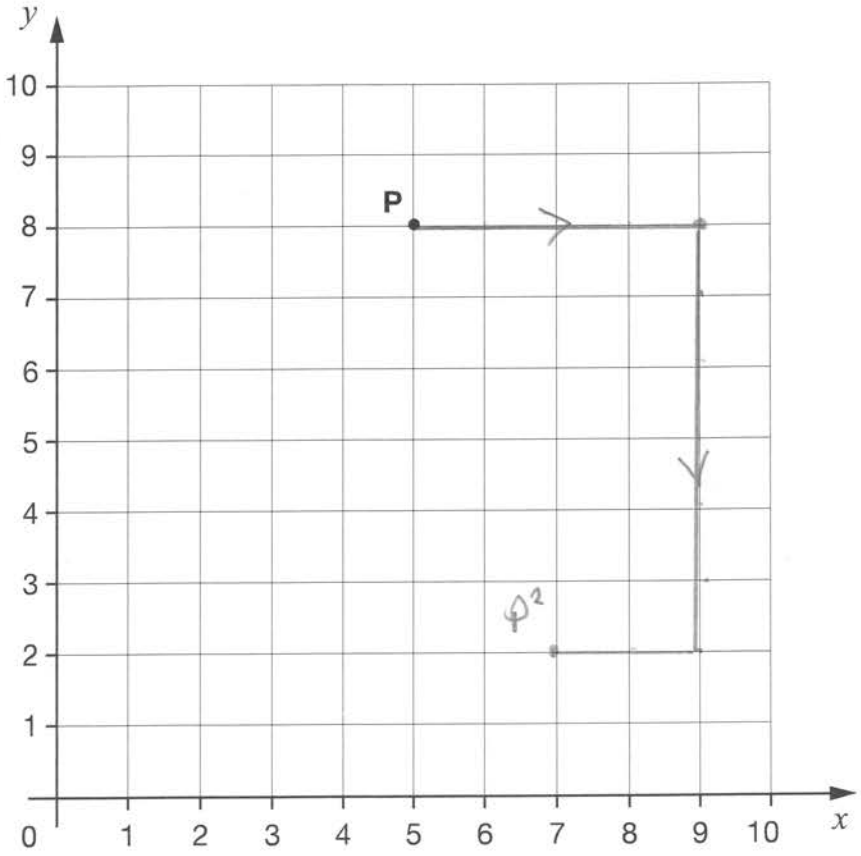
1.64

2|3·28

£1·64

1 mark

5 Point **P** is located at (5, 8) on the grid.



Point **P** is translated 4 units right, 6 units down and 2 units left.

What is the location of point **P** after the three translations?

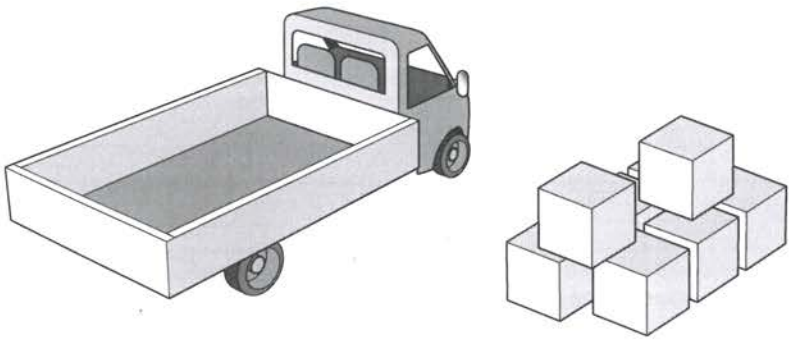
(7, 2)

1 mark

6 The mass of the empty truck is 2,250 kilograms.

It is then loaded with 8 boxes.

The mass of each box is 25 kilograms.



What is the **total** mass of the truck and its load?

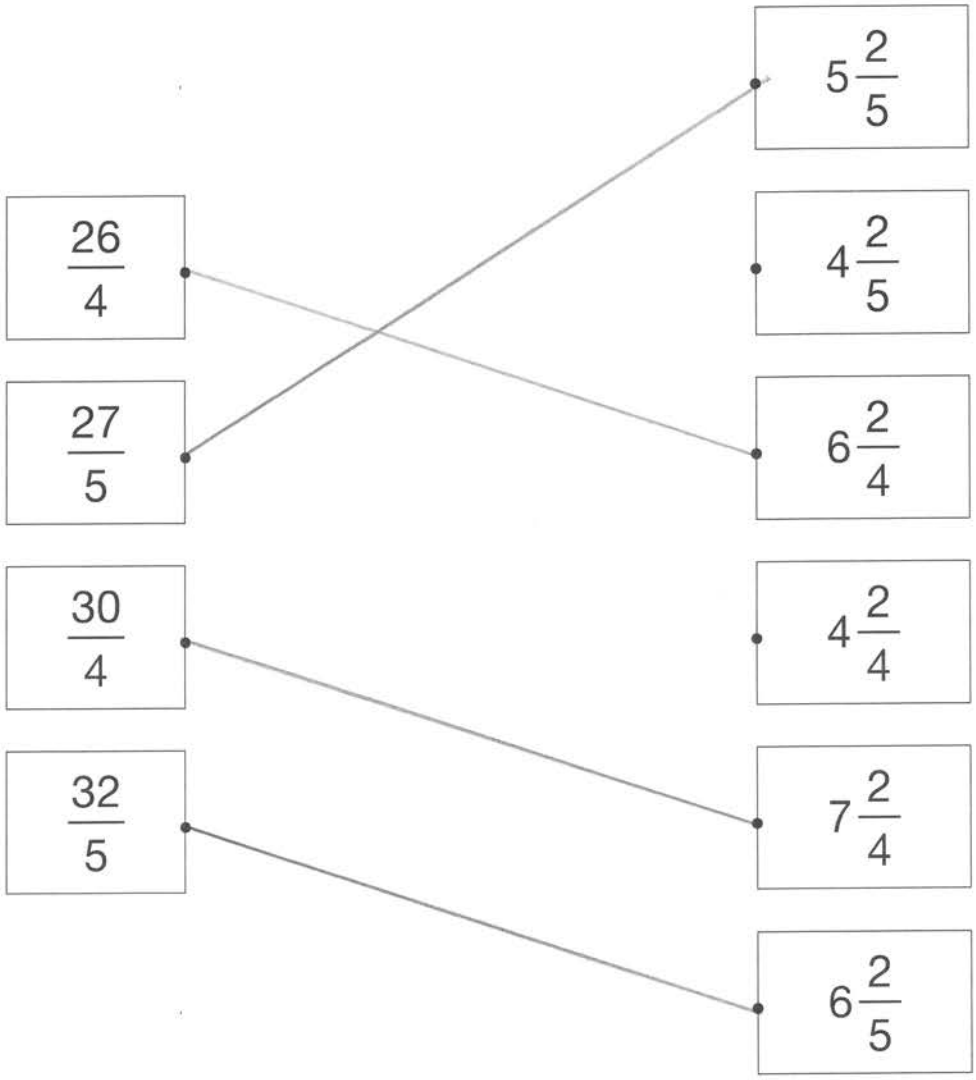
Show your method

$$\begin{array}{r} 25 \\ \times\ 8 \\ \hline 200 \\ {\scriptstyle 4} \end{array} \qquad + \qquad \begin{array}{r} 2250 \\ 200 \\ \hline 2450 \end{array}$$

2450 **kilograms**

2 marks

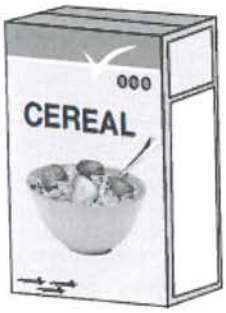
7 Draw **four lines** to match each improper fraction to its equivalent mixed number.



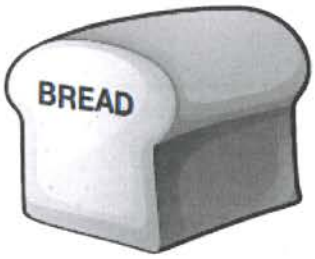
2 marks

8 Ken buys these three items.

80p



£2.50



£1.15

He pays with a £20 note.

How much change does Ken get?

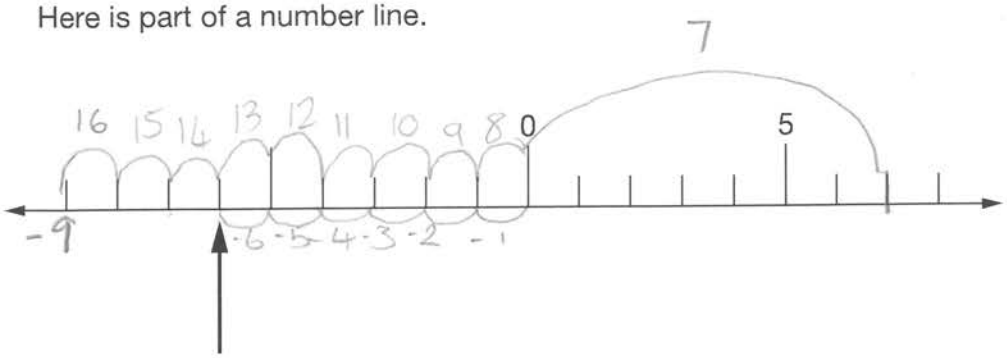
Show your method

$$\begin{array}{r} 2.50 \\ +\ 1.15 \\ \hline 0.80 \\ \hline 4.45 \\ \hline 1 \end{array} \qquad \begin{array}{r} {}^{1}\cancel{2}{}^{9}\cancel{0}.{}^{1}\cancel{0} \\ -\ \ 4.85 \\ \hline 15.15 \end{array}$$

£ 15.15

2 marks

9 Here is part of a number line.



Write the number that the arrow is pointing to.

-6

1 mark

Write the number that is 16 **less than** 7

-9

1 mark

10 Here is some information about four animals in a zoo.

	Elephant	Hippo	Rhino	Giraffe
Mass	6,300kg	1,100kg	2,400kg	1,200kg
Height	3.4m	1.5m	1.7m	6.0m

Tick the statements that are **true**.

The elephant is exactly **three times** heavier than the rhino. ☐

3 x 2400 = 7200

The hippo is a **quarter** of the height of the giraffe. ☑

60 ÷ 4 = 15

The rhino is **20cm** taller than the hippo. ☑

1.5m = 150cm 1.7m = 170cm

The tallest animal is also the heaviest. ☐

Tallest - Giraffe
Heaviest - Elephant

2 marks

11 Tick the number sentence that is correct.

O Tenth Ths

Tick **one**.

$0.304 = \frac{4}{10} + \frac{3}{1000}$ ☐

$0.43 = \frac{43}{1000}$ ☐

$0.403 = \frac{4}{10} + \frac{3}{1000}$ ☑

$0.034 = \frac{3}{10} + \frac{4}{1000}$ ☐

1 mark

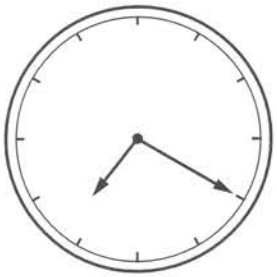
12 Each clock below shows the time in **am** or **pm**.

Match each clock to its 24-hour time.

One has been done for you.

am

pm



am

pm

12:35

04:05

07:20

22:45

19:20

21:45

1 mark

13 Write these numbers in order, starting with the **least**.

0.09 $\frac{9}{100}$ 0.999 0.99 $\frac{99}{100}$ 0.009

0.009	$\frac{9}{100}$	$\frac{99}{100}$	0.999

least

1 mark

14 Look at this expression.

$y + 4$

Tick the value for y that gives a **prime** number value for $y + 4$

8 + 4 = 12 | 9 + 4 = 13 | 10 + 4 = 14

$y = 8$	$y = 9$ ✓	$y = 10$

1 mark

Tick the value for y that gives a **square** number value for $y + 4$

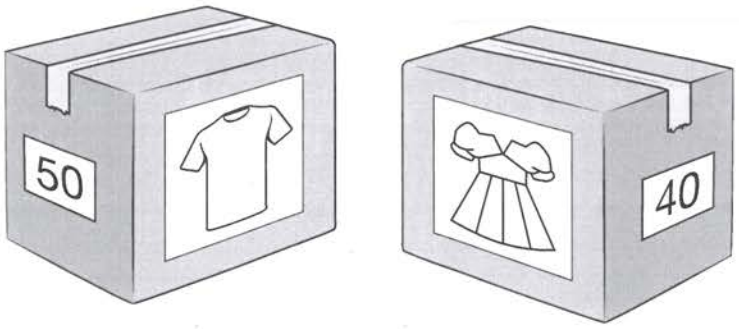
5 + 4 = 9 | 6 + 4 = 10 | 7 + 4 = 11

$y = 5$ ✓	$y = 6$	$y = 7$

1 mark

15 A factory makes T-shirts and dresses.

They pack them in boxes.



There are **50** T-shirts in a box.

How many T-shirts are there in **250** boxes?

5 x 25 = 125
50 x 250 = 12500

12600

1 mark

There are **40** dresses in a box.

How many boxes are needed for **3,000** dresses?

$$4\overline{)30.^{2}0}\quad 7.5$$

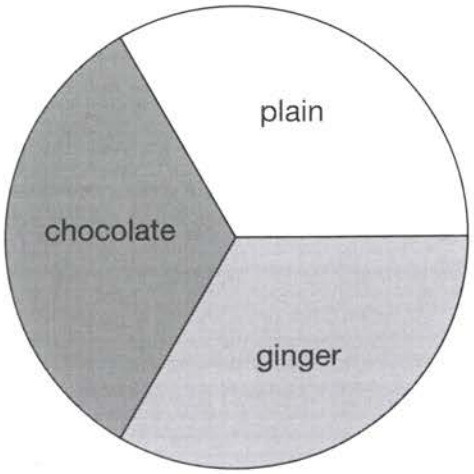
7.5 x 10 = 75

75

1 mark

16 These pie charts show the biscuits in two tins.

Tin **A** has **36** biscuits.



Tin **B** has **20** biscuits.

Tin **B** has more chocolate biscuits than Tin **A**.

Explain why this is **incorrect**.

$\frac{1}{3}$ of 36 = 12

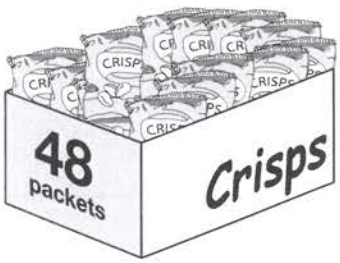
$\frac{1}{2}$ of 20 = 10

Tin A has 12 chocolate biscuits Tin B has 10

1 mark

17 A shop buys **35 boxes** of crisps.

Each box contains **48 packets** of crisps.



On average, the shop sells **56 packets** of crisps each day.

How many **days** will it take for all of the crisps to be sold?

Show your method

35
× 48
280
1400
1680

30
56 | 1680

56
112
168

30 days

3 marks

18 Convert **5.65 km** to metres.

5.65 x 1000

5650 **m**

1 mark

Convert **35.5 cm** to metres.

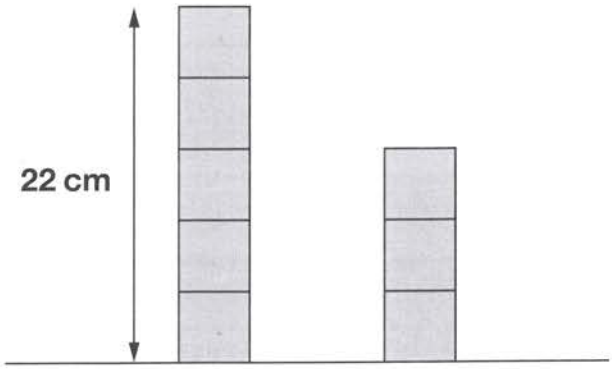
35.5 ÷ 100

0.355 **m**

1 mark

19 Jacob has some wooden blocks that are all the same size.

He uses the blocks to make two towers.



Not actual size

The height of the taller tower is 22 centimetres.

What is the height of the smaller tower?

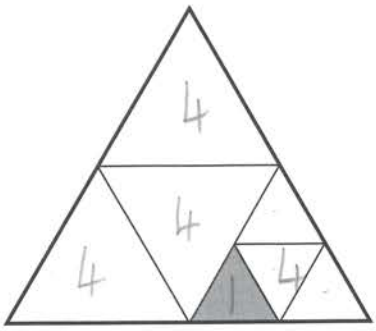
Show your method

$$\begin{array}{r} 04.4 \\ 5\overline{)22.0} \end{array} \qquad \begin{array}{r} 4.4 \\ \times \quad 3 \\ \hline 13.2 \\ 1 \end{array}$$

13.2 cm

2 marks

20 This shape is made from equilateral triangles.



What fraction of the **whole** shape is shaded?

$\frac{1}{16}$

1 mark

21 Here is some information about a number:

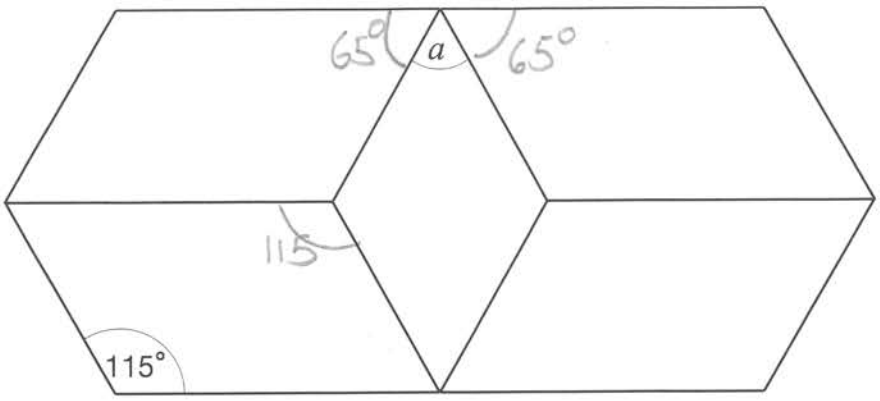
- It has two digits
- It is a multiple of **7**
- One of the digits is **8**

Write **all** the possible numbers that the number could be.

28 84 98

2 marks

22 This diagram shows four identical parallelograms and a rhombus.



Not to scale

Calculate the size of angle a.

Show your method

$2 \times 115 = 230$

$360 - 230 = 130$

$130 \div 2 = 65$

$180 - 130 = 50$

50 °

2 marks

[END OF TEST]

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Standards & Testing Agency

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