

2023 national curriculum tests

Key stage 2

Mathematics

Paper 3: reasoning

First name	Mark					
Middle name						
Last name	Salgon					
Date of birth	Day	21	Month	11	Year	2012
School name	St Huberts					
DfE number	000/0000					



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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**.

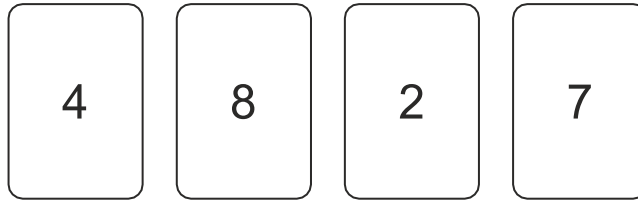
Marks

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



1

Chen has these digit cards.

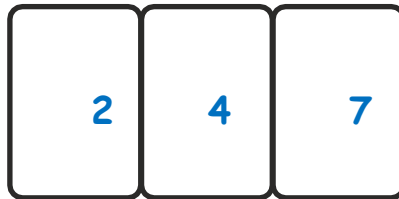


She uses three of the cards to make a **three-digit** number.

Each card can be used only **once**.

Chen puts the **4** in the **tens** place.

Write the **lowest** three-digit number that Chen could make.



1 mark

2

Tick the number **eighty thousand, three hundred and six**.

Tick **one**.

8,306

80,036

80,306

800,306

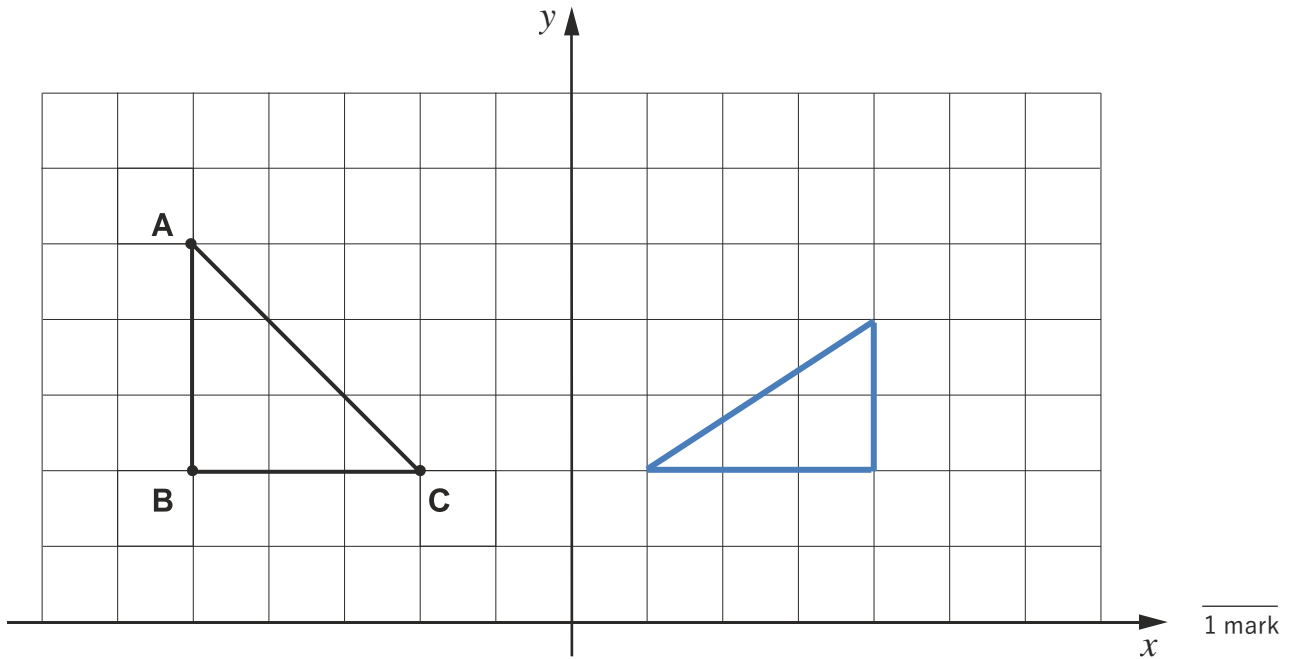
80,300,006

1 mark



3

Amina draws triangle **ABC** on a grid as shown.



She then reflects the triangle in the y -axis.

Draw the reflected triangle on the grid.

Use a ruler.



4

Write the next **two** numbers in this sequence.

1,780 1,880 1,980

2180

2280

1 mark

1 mark

5

Circle the two decimals that round to the **same** whole number.

13.2

14.7

15.9

16.3

17.6

1 mark



6

Write the missing number to make the calculation correct.

$$1,300,450 = 1,000,000 + \boxed{300,000} + 400 + 50$$

1 mark

7

Here is part of a number square.

The other part of the square has been torn off.

$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$
3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5
	6	$6\frac{1}{2}$	7	$7\frac{1}{2}$
		9	$9\frac{1}{2}$	10
			12	$12\frac{1}{2}$

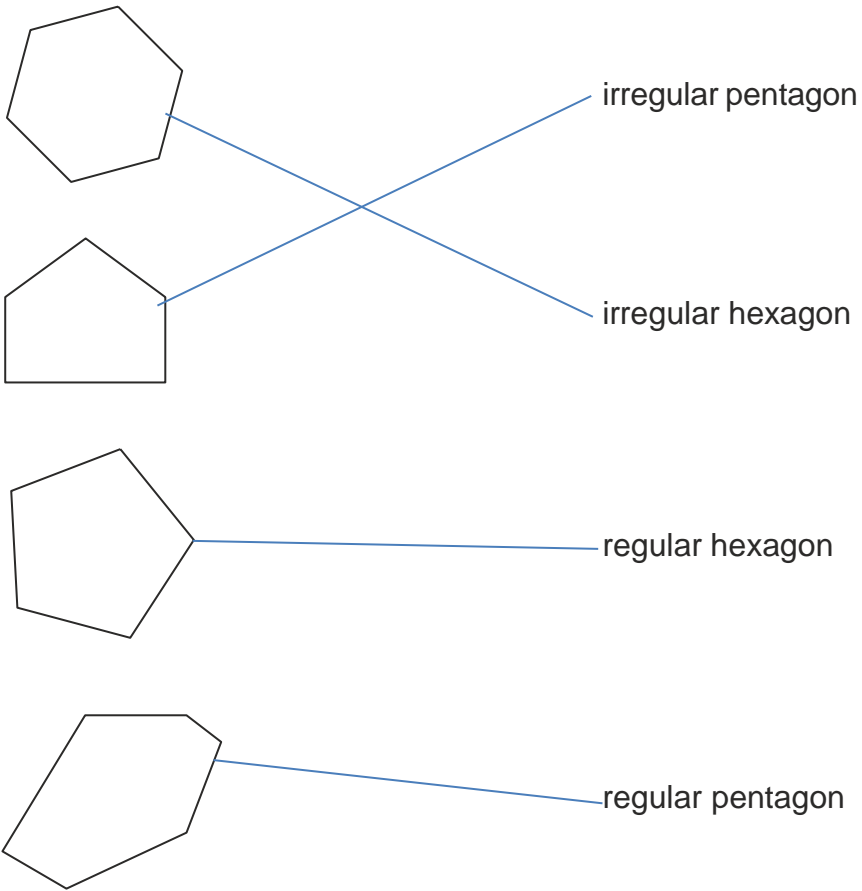
What number was in the bottom-left corner of the number square?

10.5

1 mark



Match each shape to the correct name.



1 mark



9

Jack says,

I multiplied a
whole number by 3
My answer was 32



Explain why Jack is **not** correct.

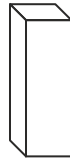
**Jack is not correct
because he hasn't been on TT Rockstars**

1 mark

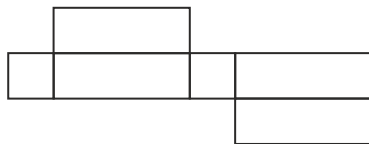
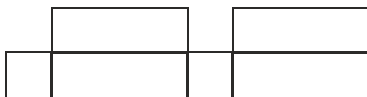
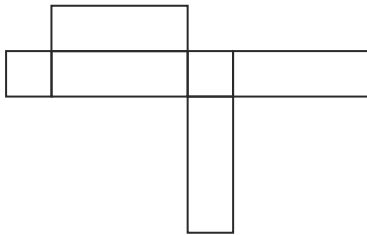
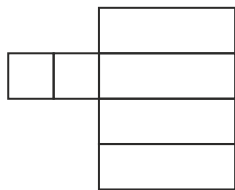


12

This is a drawing of a cuboid.



Tick the nets that could make the cuboid.



2 marks



13

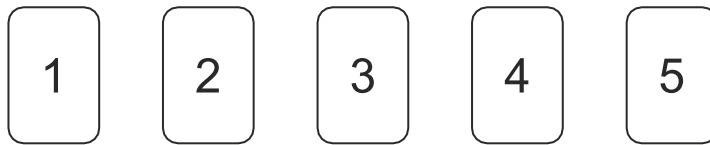
Write the missing number to make this calculation correct.

$$754 \times 6 + 754 \times 3 = 754 \times \boxed{18}$$

1 mark

14

Here are five digit cards.



Use two cards to make a fraction **equivalent to 25%**



1 mark

Use two cards to make a fraction **equivalent to 0.4**



1 mark



15

Amina went to a concert one evening.



It took her an hour and twenty minutes to get there from home.

She arrived at ten past seven.

At what time did she leave home?

6.30pm

1 mark

The concert started at 7:20 pm.

It finished at 9:05 pm.

How long did the concert last?

1 hours 15 minutes

1 mark



16

A box of 24 chocolate eggs has a mass of **870 grams**.

The empty box has a mass of **30 grams**.



What is the mass of **one** chocolate egg?

Show
your
method

$$870 + 30 = 900$$

$$900 \div 30 = 30$$

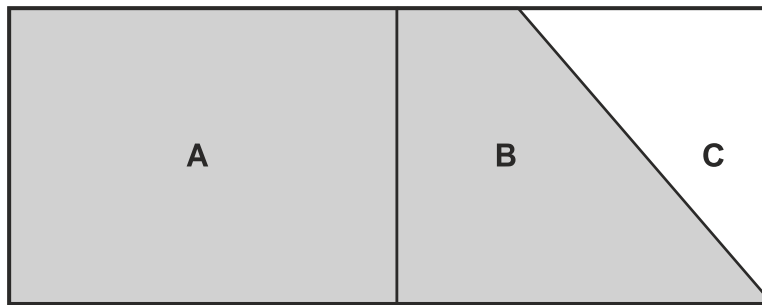
30g

2 marks



17

This rectangle is divided into three parts.



Not
to
scale

Part **A** is $\frac{1}{2}$ of the area of the rectangle.

Part **B** is $\frac{1}{3}$ of the area of the rectangle.

What **fraction** of the area of the rectangle is **shaded**?

$\frac{2}{5}$

1 mark



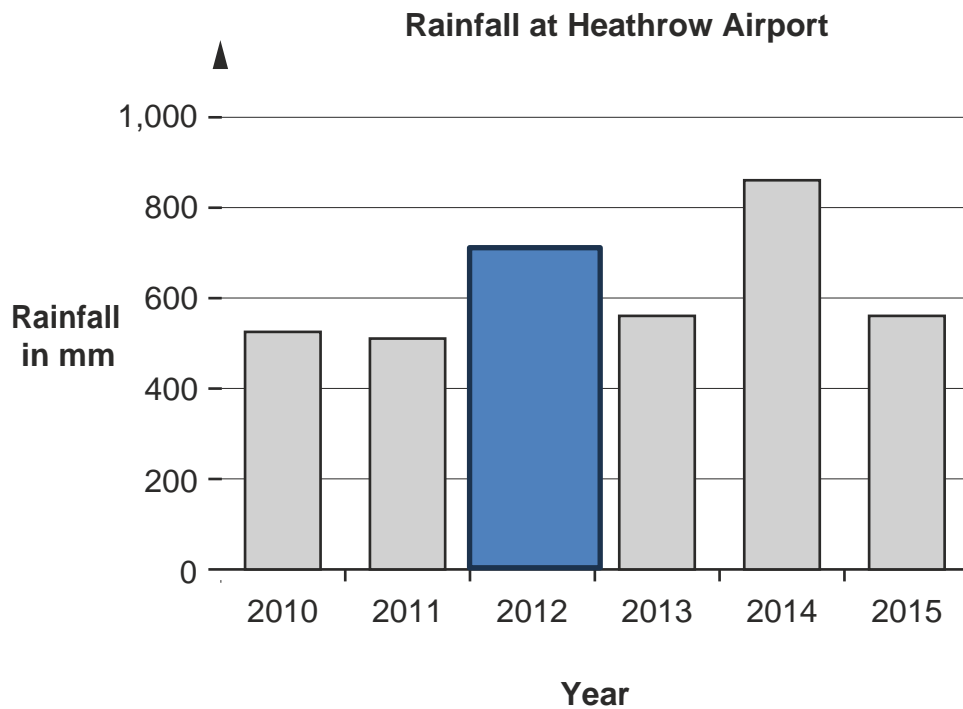
18

This table shows the total rainfall and sunshine each year at Heathrow Airport from 2010 to 2015.

Year	Rainfall in mm	Sunshine in hours
2010	521	1,371
2011	509	1,540
2012	700	1,503
2013	560	1,452
2014	864	1,669
2015	562	1,508

Use this table to complete the graph.

Use a ruler.



1 mark



Use the table to calculate the **mean** hours of sunshine for Heathrow Airport from **2013** to **2015**.

Show your method

1	4	5	2
1	6	6	9
1	5	0	8
4	6	2	9

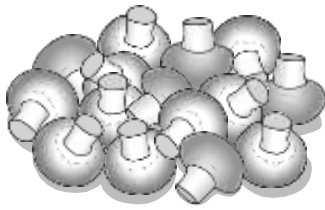
4629
hours

2 marks

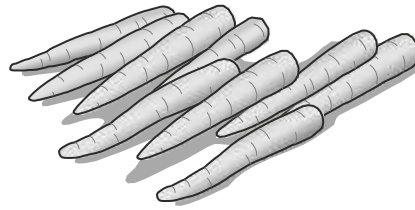


19

These are the prices of some vegetables in a shop.



Mushrooms
£3.20 for 1 kg



Carrots
60p for 1 kg

Layla buys **500 grams** of mushrooms and $1\frac{1}{4}$ kg of carrots.

She pays with a **£5** note.

How much change does Layla get?

Show
your
method

$$m = \text{£ } 1.60$$

$$c = 60 + 15 = 75$$

£76.6p

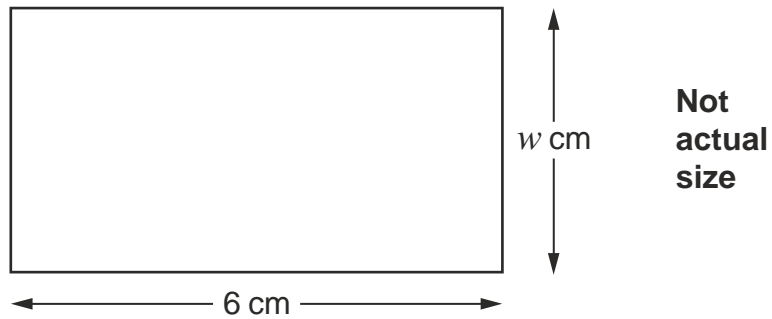
2 marks



20

The length of this rectangle is 6 cm.

The width is w cm.



Circle **all** the methods below that can be used to work out the **perimeter** of the rectangle.

$$w \times 6$$

$$w \times 2 + 12$$

$$2 \times (w + 6)$$

$$6 + w + 6 + w$$

2 marks



22

Megan uses these number machines to calculate how many diagonals different shapes have.

	number of vertices			number of diagonals
triangle	3	$\times 0$	$\div 2$	0
quadrilateral	4	$\times 1$	$\div 2$	2
pentagon	5	$\times 2$	$\div 2$	5

Complete the number machine for the **octagon**.

octagon	8	$\times 3$	$\div 2$	12
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1 mark



23

Write the missing **decimals**.

One has been done for you.

a	b	$\frac{a}{b}$
1	4	0.25
3	20	0.32
5	8	0.58

2 marks



[END OF TEST]

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2023 key stage 2 mathematics

Paper 3: reasoning

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