2019 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

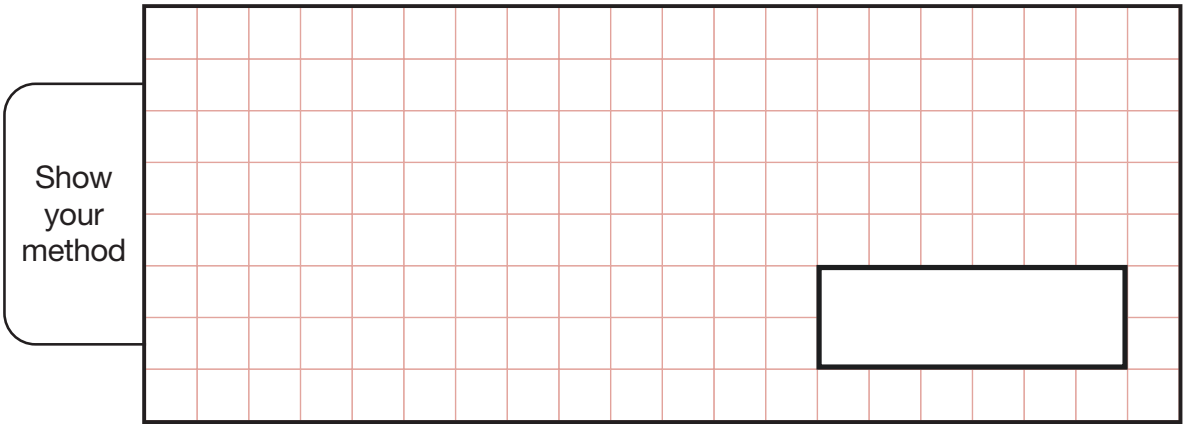
You have **40 minutes** to complete this test.

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.

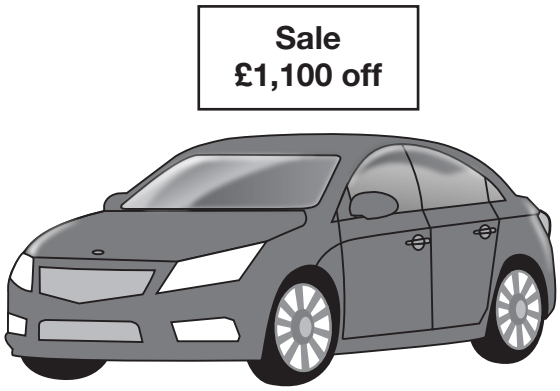
If you cannot do a question, **go on to the next one**.
You can come back to it later, if you have time.

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 The **original** price of this car is £8,999



What is the **sale** price of the car?

£

1 mark

2

3,576,219

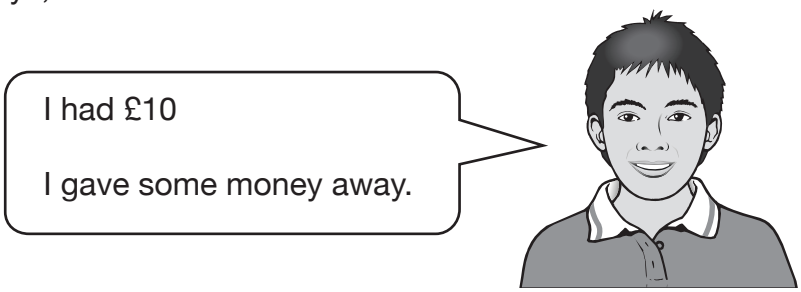
Which digit is in the **ten thousands** place?

1 mark

Round 3,576,219 to the **nearest million**.

1 mark

3 Dev says,



Which expression shows how much money Dev has left?

a is the amount of money, in pounds, that Dev gave away.

Tick **one**.

$10 + a$ ☐

$10 \div a$ ☐

$a - 10$ ☐

$10 - a$ ☐

$a \times 10$ ☐

1 mark

4 Write these masses in order, starting with the **lightest**.

1.25 kg 0.99 kg 1.025 kg 0.009 kg

kg	kg	kg	kg

lightest

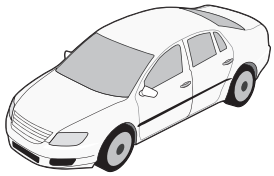
1 mark

5 Write the missing digits to make this **addition** correct.

	2		+		2	= 200

1 mark

6 John buys one toy car and one pack of stickers.



£1.49

£1.64

He pays with a **£10** note.

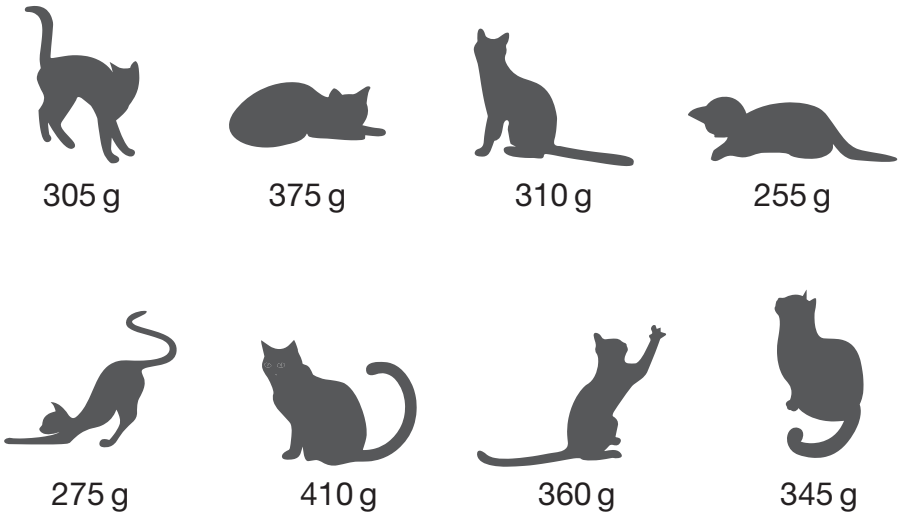
How much change does John get?

Show your method

£

2 marks

7 This picture shows the masses of eight kittens.



What is the **difference** in mass between the heaviest kitten and the lightest kitten?

g

1 mark

The masses of the kittens are to be put in four groups.

Write the missing numbers in the table.

One has been done for you.

Mass in g	Number of kittens
250–299	
300–349	
350–399	
400–449	1

1 mark

8 Ken is playing a game. He has 4,289 points.

Then he scores another 355 points.

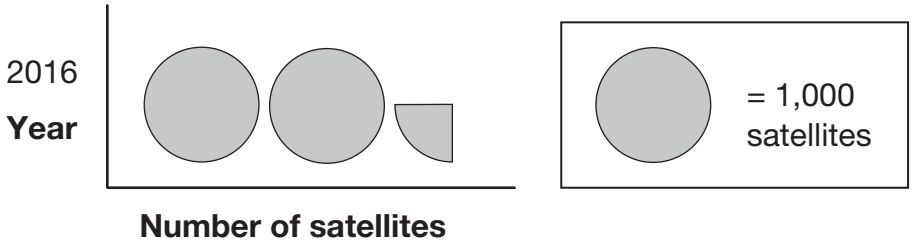
Ken's target is 6,000 points.

How many **more** points does Ken need to reach his target?

Show your method

2 marks

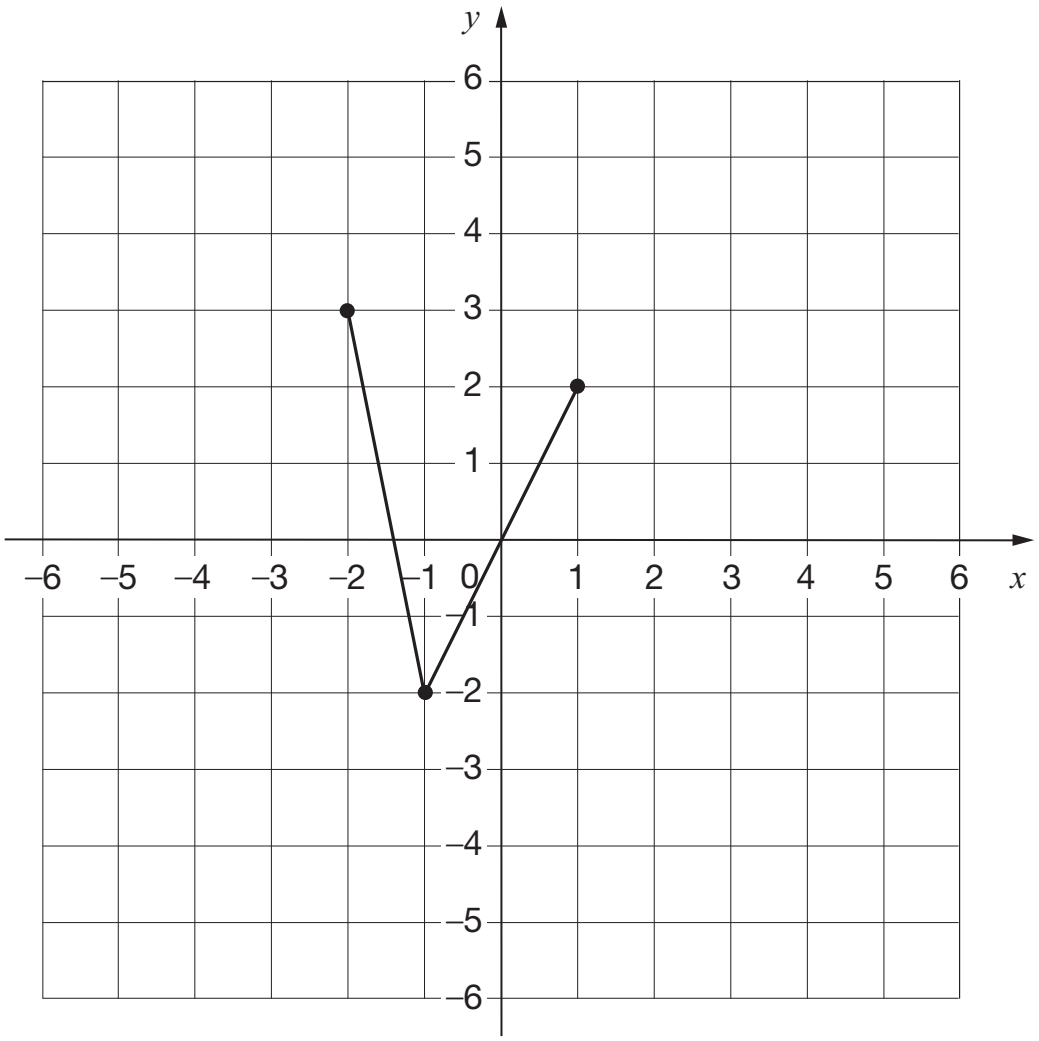
9 This pictogram shows the number of satellites above the Earth in 2016.



How many satellites were above the Earth in 2016?

1 mark

10 On the grid there are three points joined by two lines.



Lara plots **another point** on the grid at **(–1, 2)**.

She joins the points to make a quadrilateral.

Complete Lara's quadrilateral on the grid.
Use a ruler.

1 mark

Then Lara translates the quadrilateral **4 squares to the right**.

Draw the quadrilateral in its new position on the grid.

1 mark

11 Here are five numbers.

~~2~~ 3 4 5 6

Write each number on the correct cards.

The number 2 has been written on the correct cards for you.

Prime numbers	Factors of 12	Factors of 15
2	2	

2 marks

12 Amina's bed is 190 cm in length and 91 cm in width.

She is making a **one-tenth** scale model of the bed.

What are the length and width of Amina's model?

length = ____ **cm**

width = ____ **cm**

1 mark

13

Kirsty says,

When you double the size of an acute angle, you always get an obtuse angle.

Explain why Kirsty is **not** correct.

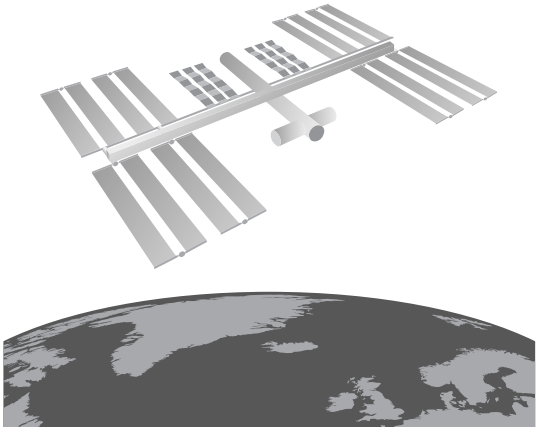
1 mark

14 How many days are there in September, October and November altogether?

days

1 mark

15



The International Space Station orbits the Earth at a height of 250 miles.

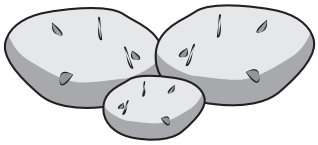
What is the height of the International Space Station in **kilometres**?

Use 8 kilometres equals 5 miles.

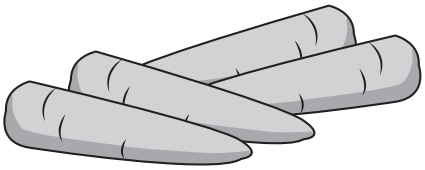
km

1 mark

16



potatoes
£1.50 per kg



carrots
£1.80 per kg

Jack buys $1\frac{1}{2}$ kg of potatoes and $\frac{1}{2}$ kg of carrots.

How much **change** does he get from **£5**?

Show your method

£

2 marks

17

$$x + 2y = 20$$

x and y are whole numbers **less than 10**

What could x and y be?

$x =$ ☐

$y =$ ☐

1 mark

18

Tick the fractions **less than** $\frac{5}{8}$

$\frac{1}{2}$ ☐

$\frac{2}{8}$ ☐

$\frac{3}{4}$ ☐

$\frac{7}{16}$ ☐

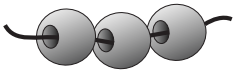
$\frac{24}{32}$ ☐

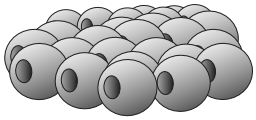
2 marks

19 Layla makes jewellery to sell at a school fair.

Each bracelet has **53** beads.

She makes **68** bracelets.





Each necklace has **105** beads.

She makes **34** necklaces.

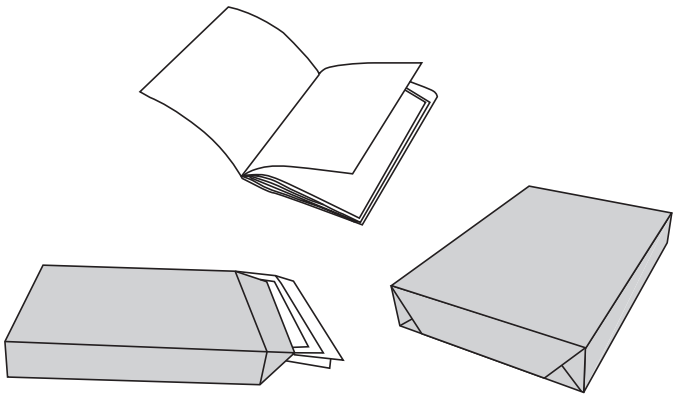
How many beads does Layla use **altogether**?

Show your method

beads

3 marks

20 Adam is making booklets.



Each booklet must have **34** sheets of paper.

He has **2** packets of paper.

There are **500** sheets of paper in each packet.

How many complete booklets can Adam make from **2** packets of paper?

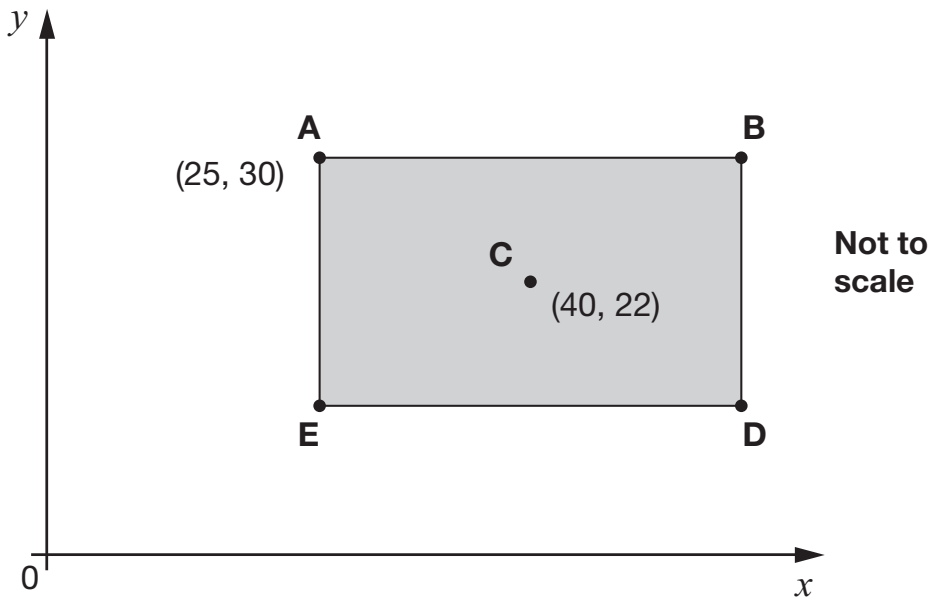
Show your method

booklets

2 marks

21 **ABDE** is a rectangle on coordinate axes.

The sides of the rectangle are parallel to the axes.



Not to scale

Point **C** is the centre of the rectangle.

What are the coordinates of **B** and **D**?

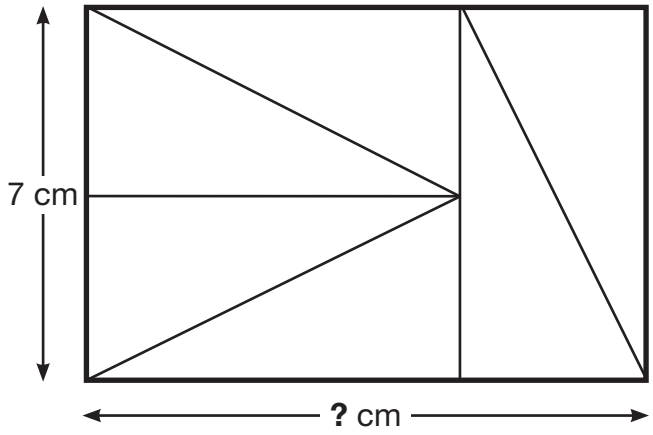
B is (,)

1 mark

D is (,)

1 mark

22 Six identical right-angled triangles are arranged to make a rectangle.



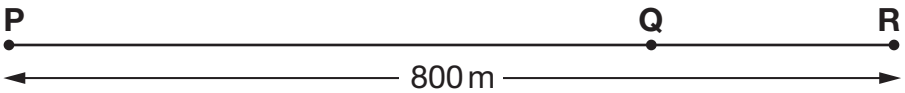
Not actual size

Calculate the **length** of the rectangle.

cm

1 mark

23

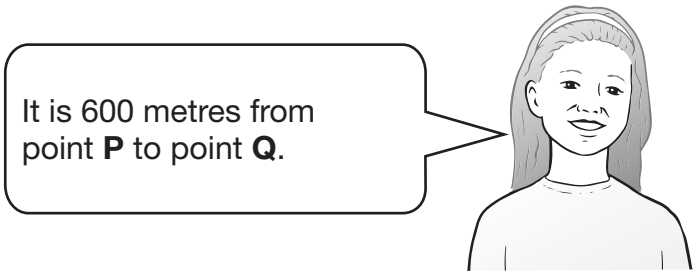


Not to scale

The distance from point **P** to point **R** is 800 metres.

The distance from point **P** to point **Q** is **4 times** the distance from point **Q** to point **R**.

Olivia says,



Explain why Olivia is **not** correct.

1 mark

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Standards & Testing Agency

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Paper 3: reasoning
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