2016 national curriculum tests

Key stage 2

Mathematics

Paper 3: reasoning

This link shows video solutions for the whole paper.

For solutions to individual questions, click on the link below the question number.

First name						
Middle name						
Last name						
Date of birth	Day		Month		Year	
School name						
DfE number						

1 The numbers in this sequence increase by 14 each time.

Write the missing numbers.

☐ 82 96 ☐ 124 138 ☐

2 marks

2 This table shows the temperature at 9am on three days in January.

1st January	8th January	15th January
+ 5°C	− 4°C	+ 1°C

What is the difference between the temperature on 1st January and the temperature on 8th January?

°C

1 mark

On 22nd January the temperature was 7 degrees lower than on 15th January.

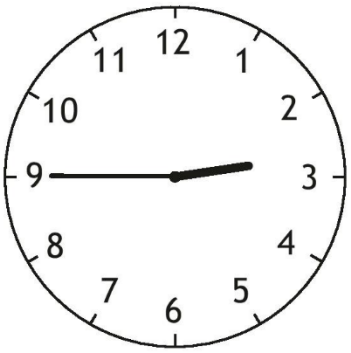
What was the temperature on 22nd January?

°C

1 mark

3

A clock shows this time twice a day.

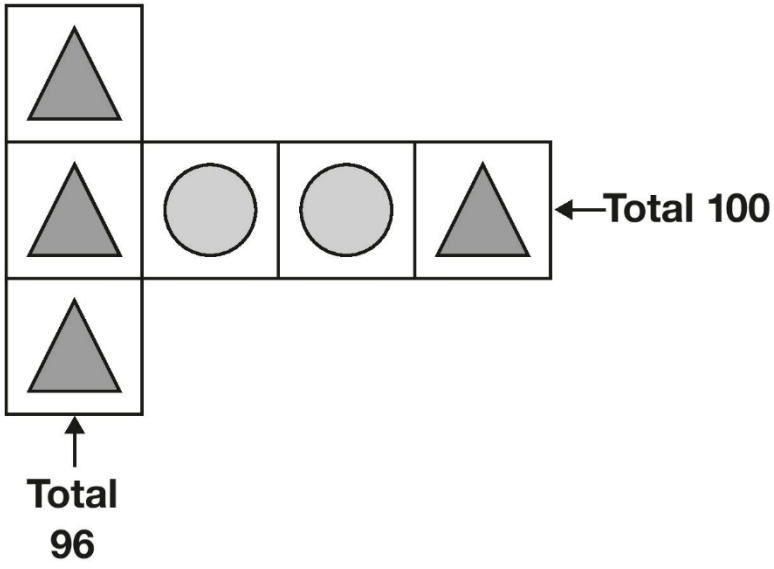


Tick the two digital clocks that show this time.

03:45	02:45	09:45
21:45	14:45	

1 mark

4 Each shape stands for a number.



Work out the **value** of each shape.

▲ = _____ 1 mark

● = _____ 1 mark

5 Write these numbers in order, starting with the **smallest**.

0.78 0.607 5.6 0.098 4.003

smallest

1 mark

6 Jacob cuts **4** metres of ribbon into **three** pieces.

The length of the first piece is **1.28** metres.

The length of the second piece is **1.65** metres.

Work out the length of the third piece.

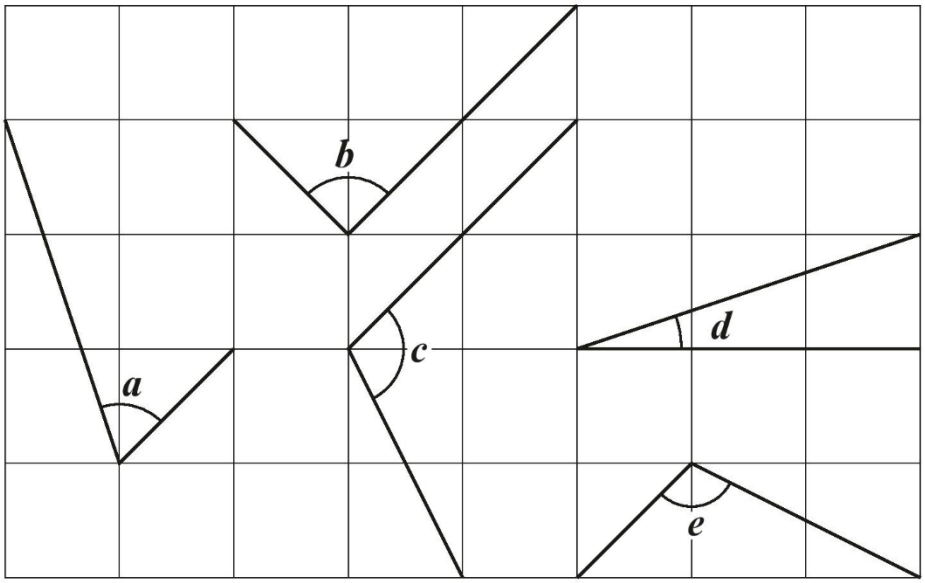
Show your method

metres

2 marks

7

Here are five angles marked on a grid of squares.



Write the letters of the angles that are **obtuse**.

_____

1 mark

Write the letters of the angles that are **acute**.

_____

1 mark

8 Olivia buys three packets of nuts.

She pays with a **£2 coin**.

This is her change.

What is the cost of **one** packet of nuts?

Show your method

2 marks

9

Here is part of the bus timetable from Riverdale to Mott Haven.

Riverdale	10:02	10:12	10:31	10:48
Kingsbridge	10:11	10:21	10:38	10:55
Fordham	10:28	10:38	10:54	11:11
Tremont	10:36	10:44	11:00	11:17
Mott Haven	10:53	11:01	11:17	11:34

How many minutes does it take the 10:31 bus from Riverdale to reach Mott Haven?

minutes

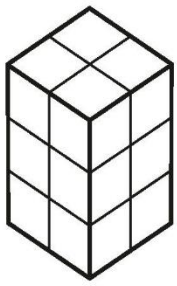
1 mark

Mr Evans is at Fordham at 10:30

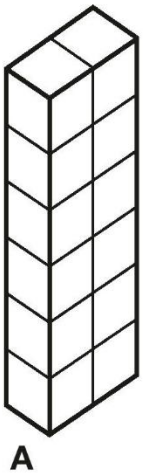
What is the **earliest** time he can reach Tremont on the bus?

1 mark

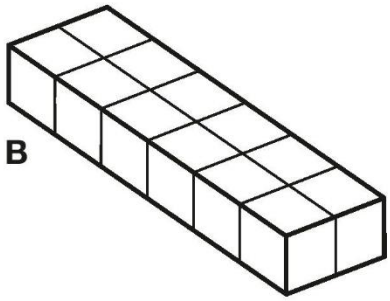
10 Emma makes a cuboid using 12 cubes.



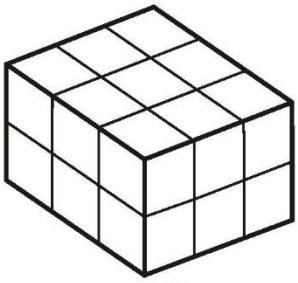
Write the letter of the cuboid that has a **different** volume from Emma's cuboid.



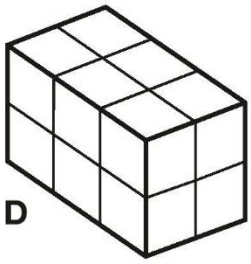
A



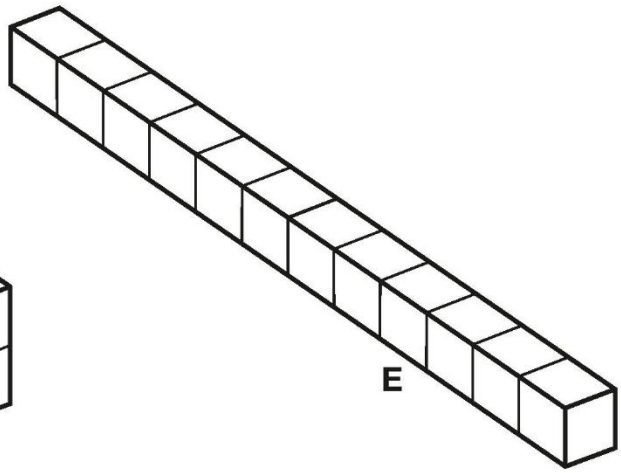
B



C



D



E

_____

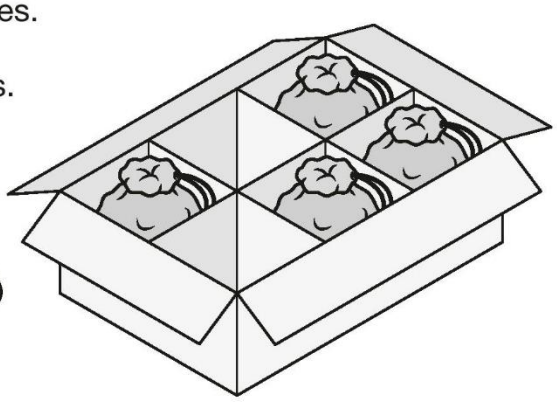
1 mark

11

A toy shop orders 11 boxes of marbles.

Each box contains 6 bags of marbles.

Each bag contains 45 marbles.



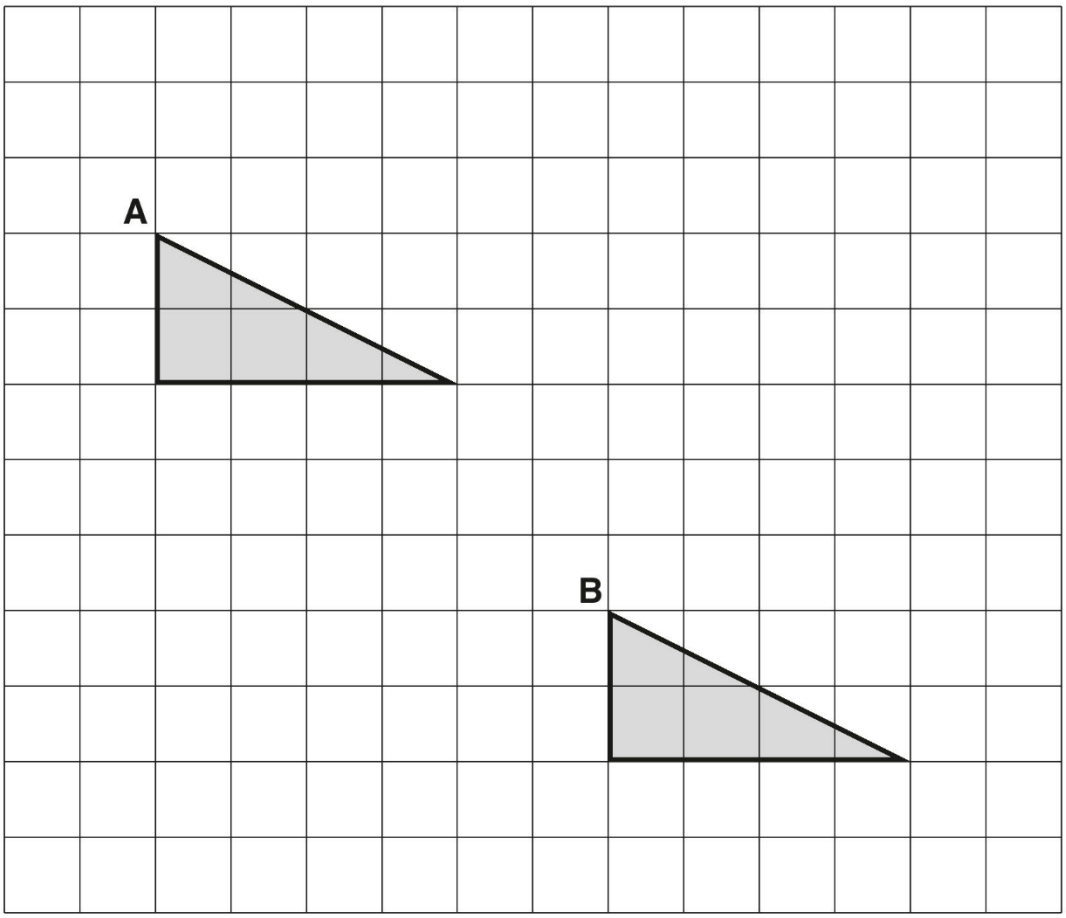
How many **marbles** does the shop order in total?

Show your method

marbles

2 marks

12 A triangle is translated from position **A** to position **B**.



Complete the sentence.

The triangle has moved ☐ squares to the right

and ☐ squares down.

1 mark

13 Lara chooses a number less than 20

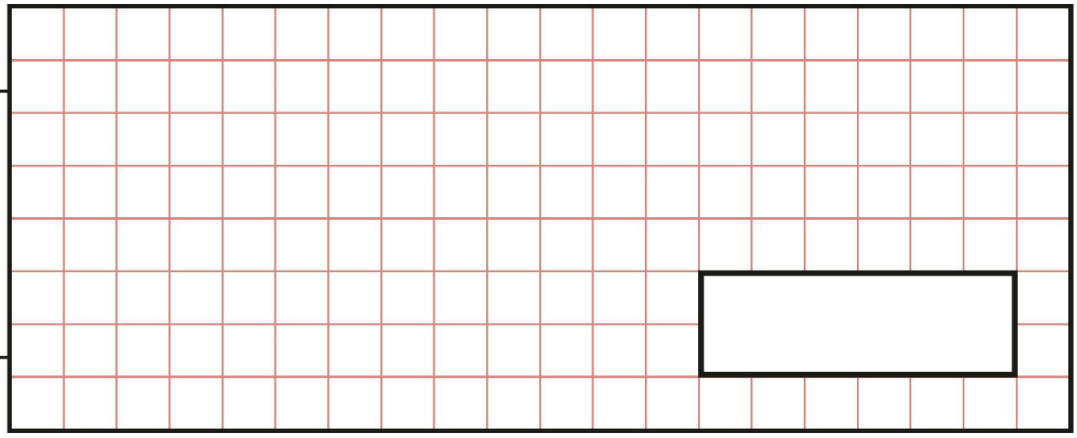
She divides it by 2 and then adds 6

She then divides this result by 3

Her answer is 4.5

What was the number she started with?

Show your method



2 marks

14 Complete each sentence using a number **from the list below**.

120 240 600 1,440 3,600 6,000

There are ☐ seconds in an hour.

1 mark

There are ☐ minutes in a day.

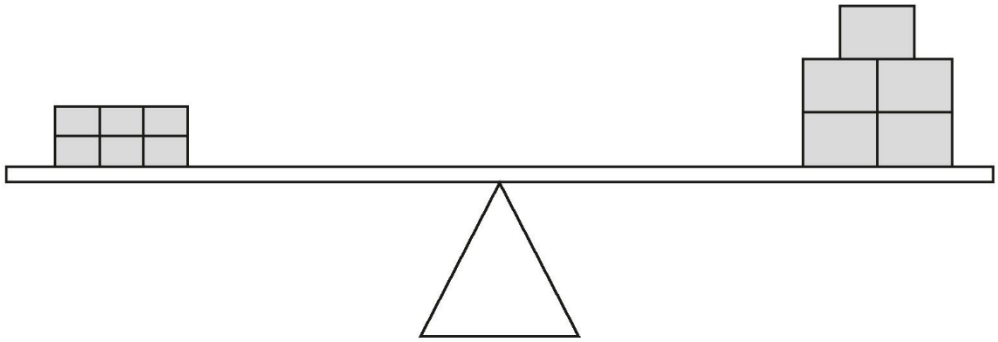
1 mark

15 Complete this table by rounding the numbers to the **nearest hundred**.

	Rounded to the **nearest hundred**
20,906	
2,090.6	
209.06	

2 marks

16 6 small bricks have the same mass as 5 large bricks.



The mass of one small brick is 2.5 kg.

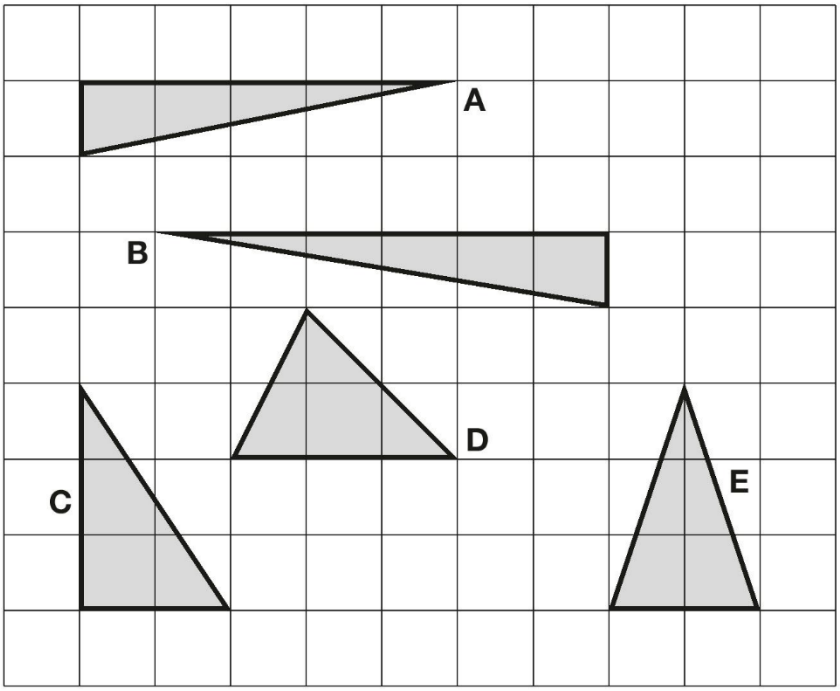
What is the mass of one large brick?

Show your method

kg

2 marks

17 Here are five triangles on a square grid.



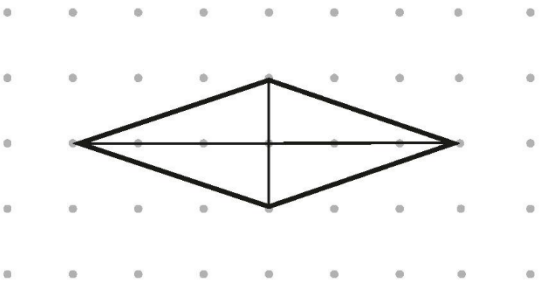
Four of the triangles have the same area.

Which triangle has a **different** area?

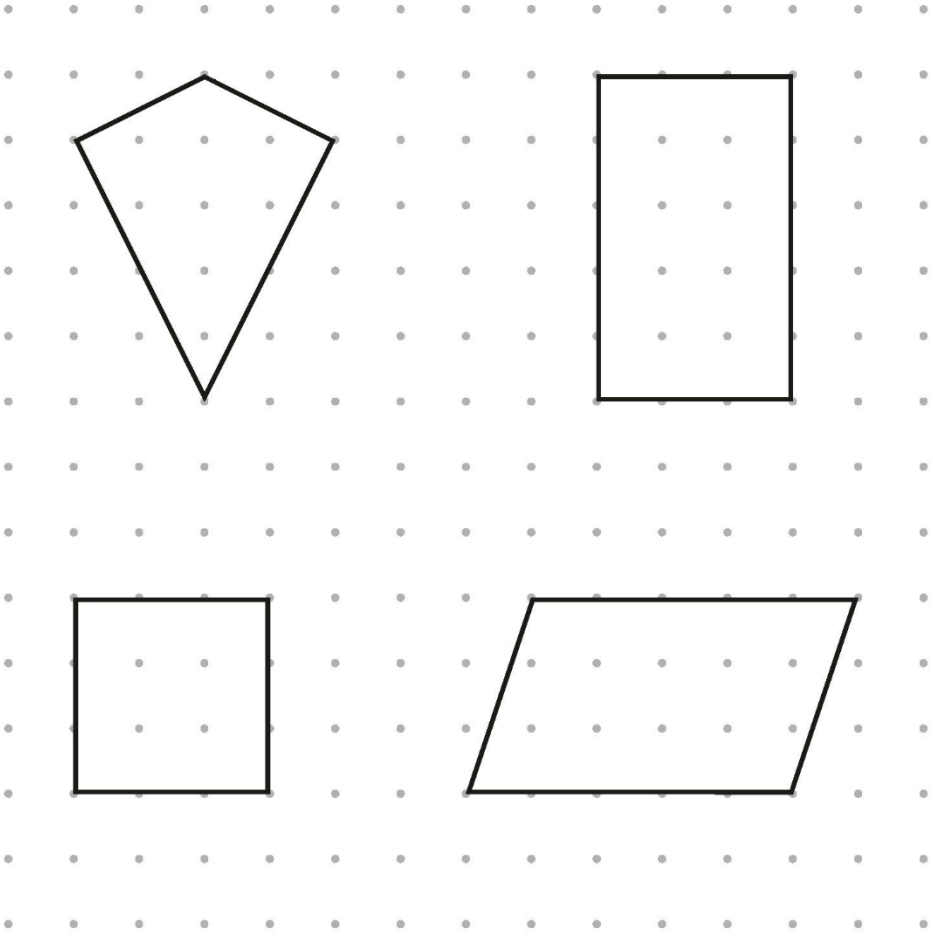
_____

1 mark

18 The diagonals of this quadrilateral cross at right angles.



Tick **all** the quadrilaterals that have diagonals which cross at right angles.



2 marks

19 Circle two numbers that multiply together to equal **1 million**.

200 2,000 5,000 50,000

1 mark

20 Lara had some money.

She spent £1.25 on a drink.

She spent £1.60 on a sandwich.

She has **three-quarters** of her money left.

How much money did Lara have to **start with**?

Show your method

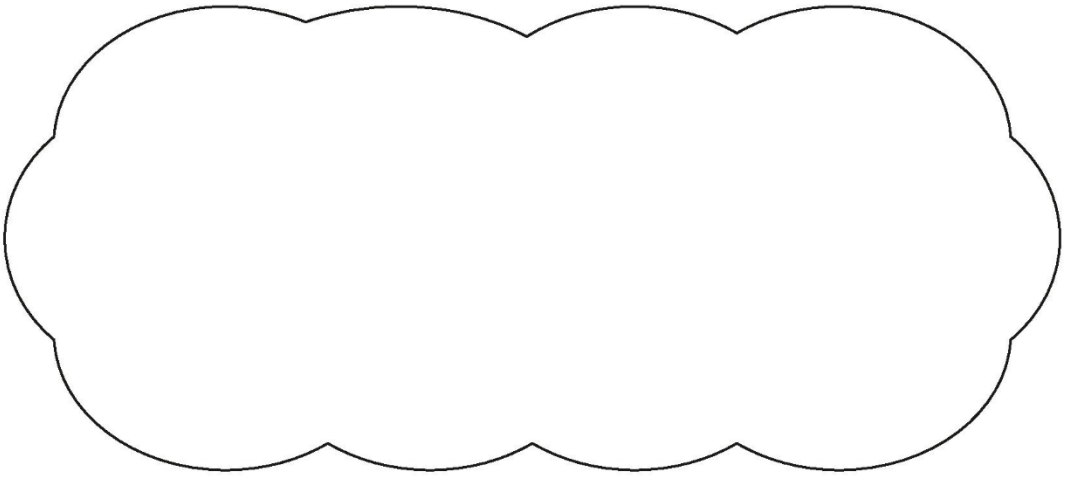
£

2 marks

21

$$5{,}542 \div 17 = 326$$

Explain how you can use this fact to find the answer to **18 × 326**



1 mark