

National Curriculum Tests

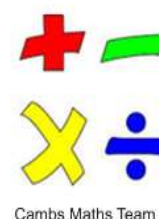
Key Stage 2

Mathematics

Paper 3: Reasoning

First Name						
Middle Name						
Last Name						
Date of Birth	Day		Month		Year	
School Name						

Published November 2016



Instructions

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

Questions and answers

You have **40 minutes** to complete the 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.

Some questions have a method box like this:

[illegible]

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

If you cannot do one of the questions, **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 pages tells you the maximum number of marks for each question.

1. The numbers in this sequence increase by 18 each time.

Write the missing numbers.

<input type="text"/>	74	92	<input type="text"/>	128	146	<input type="text"/>
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2 marks

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

4th November	11th November	18th November
+ 7°C	- 5°C	+ 2°C

What is the difference between the temperature on 4th November and the temperature on 11th November?

 °C

1 mark

On 25th November the temperature was 8 degrees lower than on 18th November.

What was the temperature on 25th November?

 °C

1 mark

3. A clock shows this time twice a day.



Tick the two digital clocks that show this time.

01:45

02:45

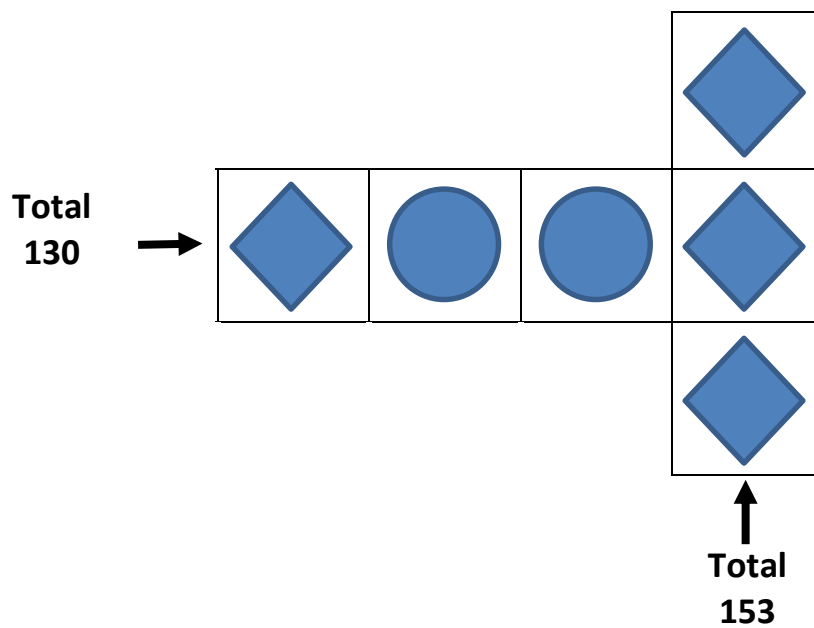
09:45

21:45

13:45

1 mark

4. Each shape stands for a number.

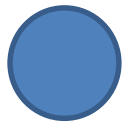


Work out the **value** of each shape:



= _____

_____ 1 mark



= _____

_____ 1 mark

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

0.87 0.304 6.9 0.097 3.005

smallest

_____ 1 mark

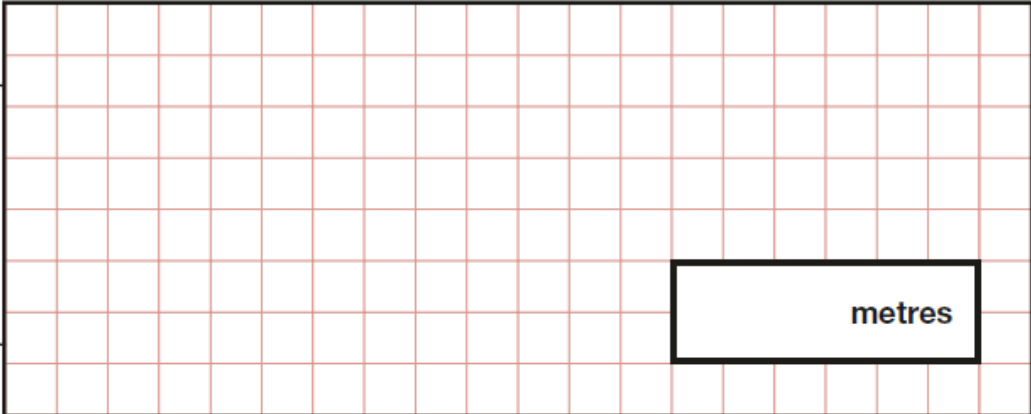
6. Jacob cuts **6** metres of string into **three** pieces.

The length of the first piece is **2.59** metres.

The length of the second piece is **1.34** metres.

Work out the length of the third piece.

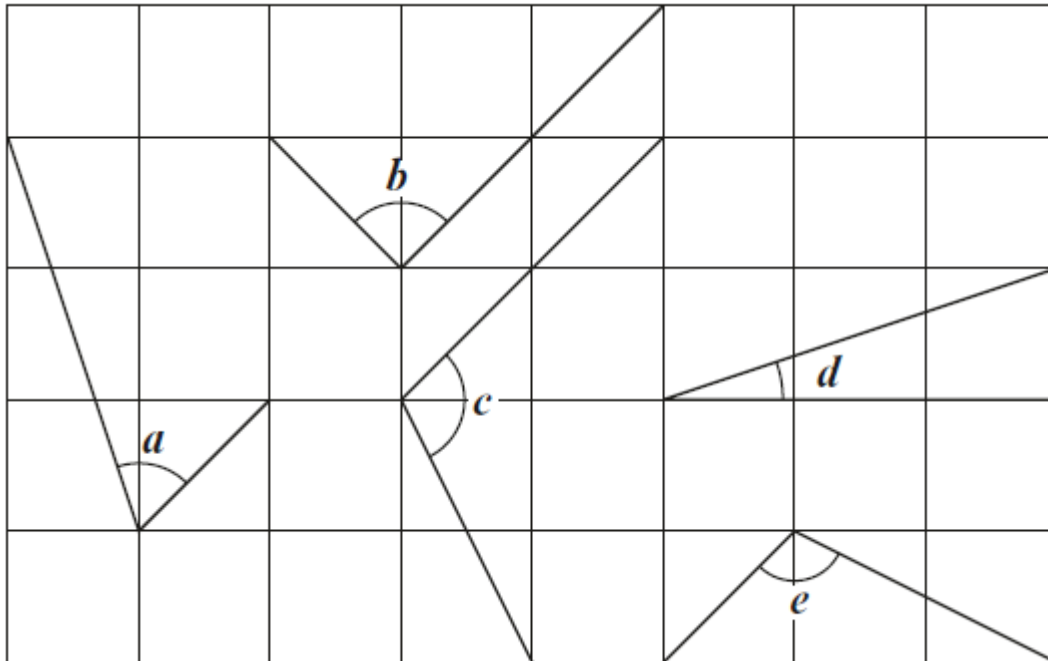
Show
your
method



metres

2 marks

7. Here are five angles marked on a grid of squares.



How many **acute** angles are there?

1 mark

How many **obtuse** angles are there?

1 mark

8. Olivia buys three packets of crisps.



She pays with a £2 coin.

This is her change.



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

Show your method

2 marks

9. Here is part of a train timetable from Guilden to Somerstown.

Guilden	11:05	11:15	11:34	11:51
Queensborough	11:14	11:24	11:41	11:58
Richmarsh	11:31	11:41	11:57	12:14
East Hollow	11:39	11:47	12:03	12:20
Somerston	11:56	12:04	12:20	12:37

How many minutes does it take the 11:34 train from Guilden to reach Somerston?

minutes

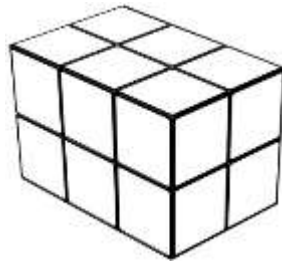
1 mark

Mrs Jacobs is at Richmarsh at 11:35.

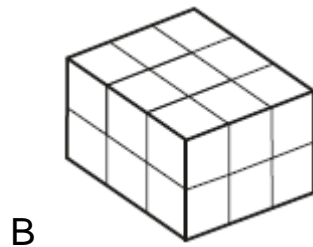
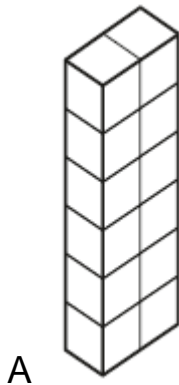
What is the earliest time she can reach East Hollow on the train?

1 mark

10. Ryan makes a cuboid using 12 cubes



Write the letter of the cuboids that have the **same** volume as Ryan's cuboid.

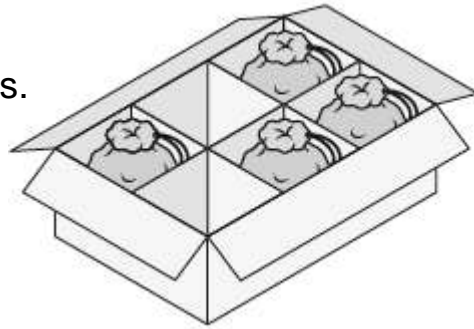
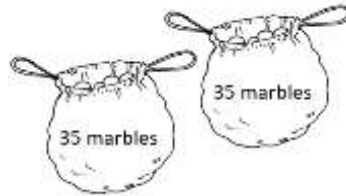


1 mark

- 11.** A toy shop orders 9 boxes of marbles.

Each box contains 6 bags of marbles.

Each bag contains 35 marbles.



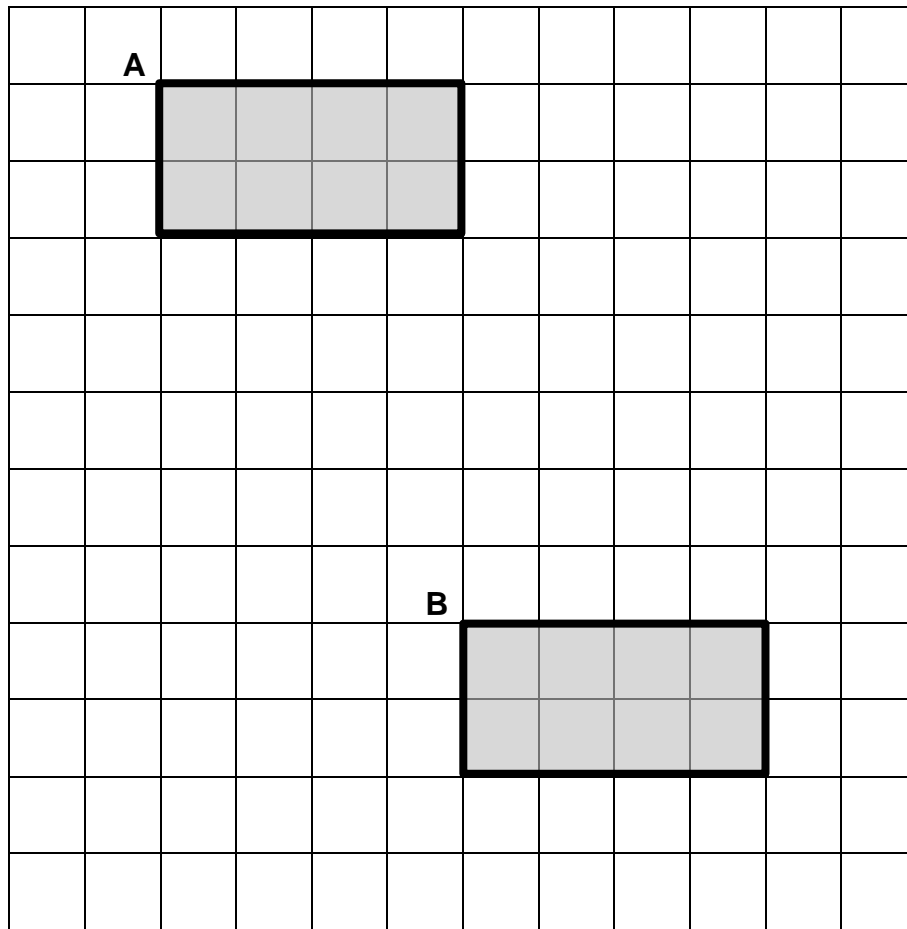
How many **marbles** does the shop order in total?

Show your method

marbles

2 marks

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



Complete the sentence.

The rectangle has moved _____ squares to the right
and _____ squares down.

1 mark

13. Lara chooses a number between 20 and 40.

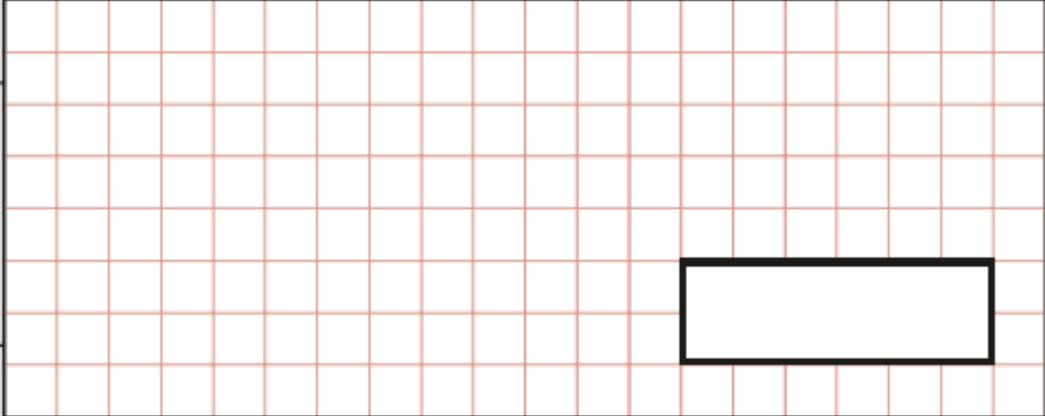
She divides it by 2 and then adds 16

She then divides this result by 3

Her answer is 10.5.

What was the number she started with?

Show
your
method



2 marks

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

24 120 168 1,440 3,560 3,600

There are

hours in a week.

1 mark

There are

months in a decade.

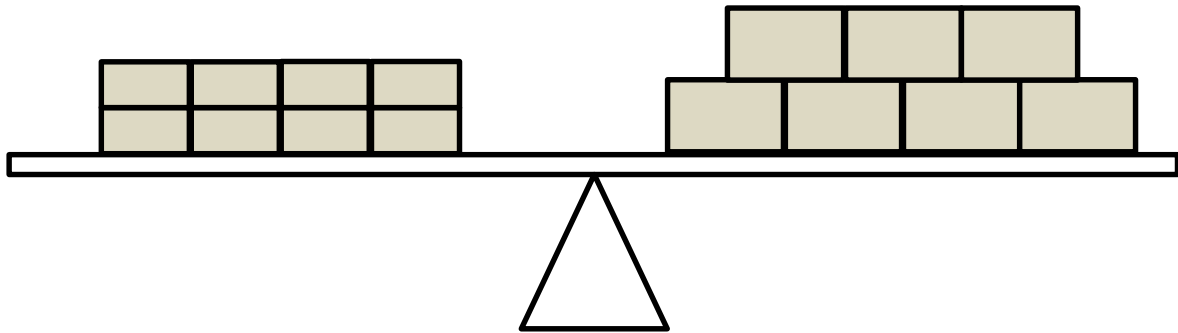
1 mark

15. Complete this table by rounding to the **nearest thousand**.

	Rounded to the nearest thousand
90,602	
9,060.2	
906.02	

2 marks

16. 8 small boxes have the same mass as 7 large boxes.



The mass of one small box is 3.5kg.

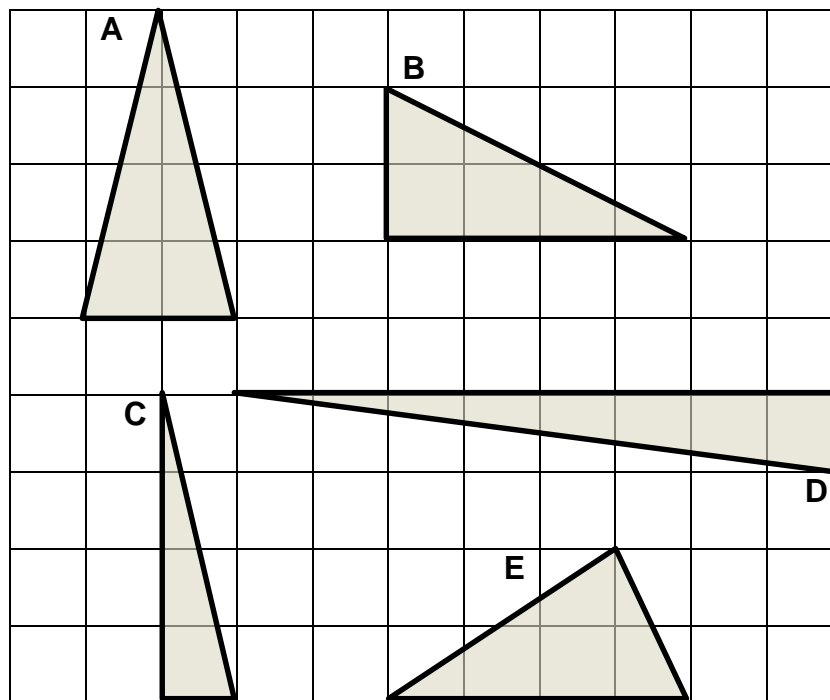
What is the mass of one large box?

Show your method

A large rectangular grid with red lines, consisting of 10 columns and 10 rows. To the left of the grid is a rounded rectangular box containing the text "Show your method". To the right of the grid, near the bottom, is a smaller rectangular box for the final answer.

2 marks

17. Here are five triangles on a square grid.

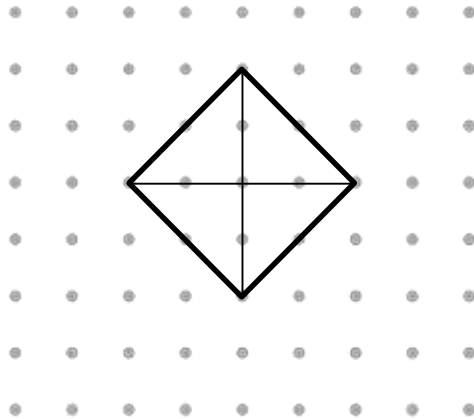


Four of the triangles have the same area.

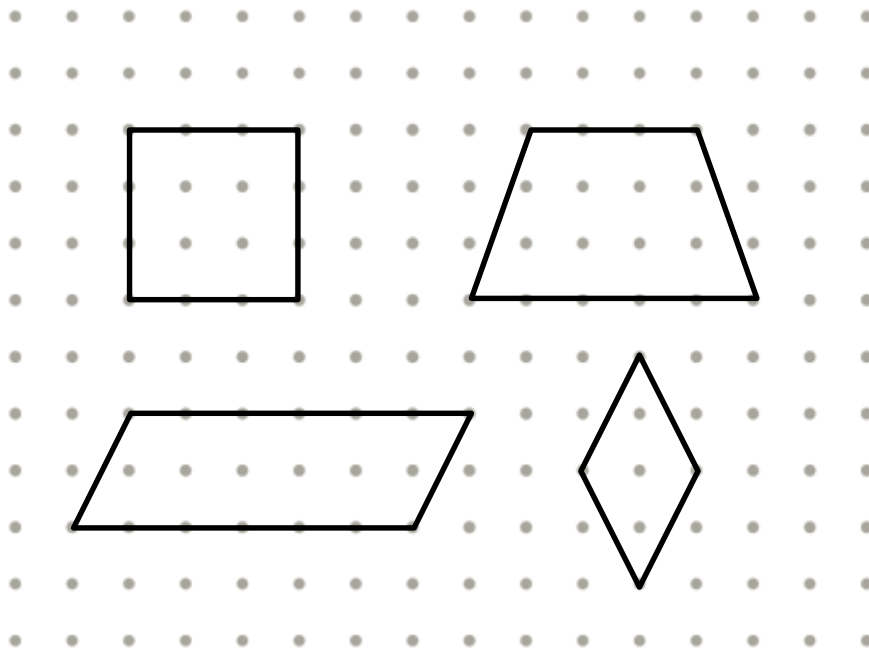
Which triangle has a **different** area?

1 mark

18. The diagonals of this quadrilateral cross at right angles.



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



2 marks

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

20 500 5,000 20,000 50,000

1 mark

20. Lara had some money.

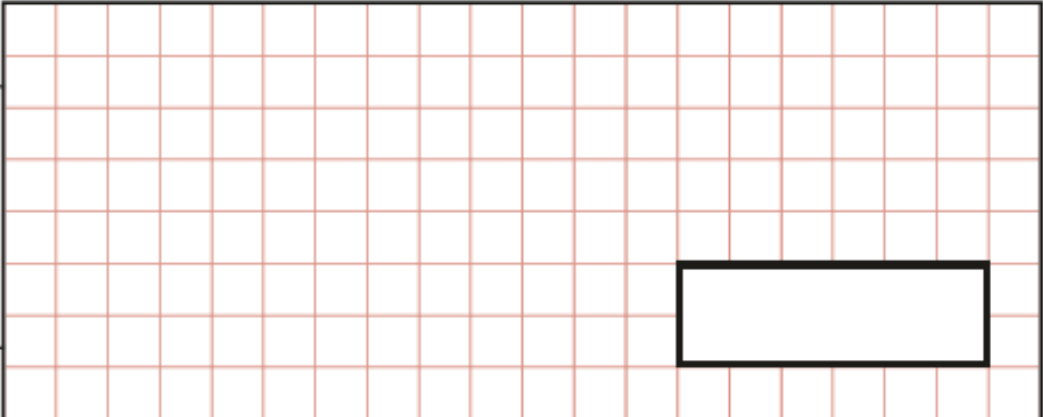
She spent £1.35 on a notebook.

She spent £1.60 on a pen.

She has **two-thirds** of her money left.

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

Show your method

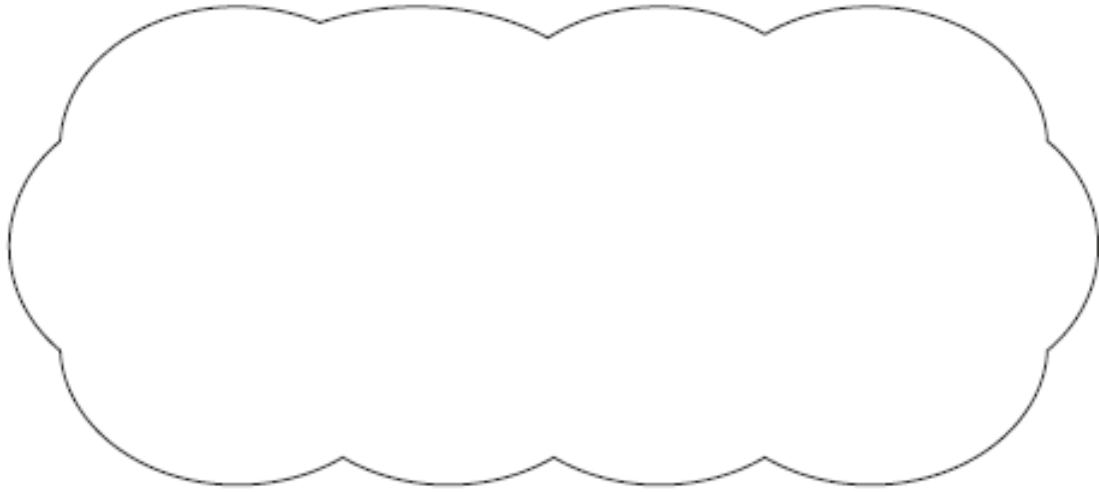


2 marks

21.

$$4,301 \div 17 = 253$$

Explain how you can use this fact to find the answer to **16 x 253**



1 mark