

2016 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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1

The numbers in this sequence increase by 14 each time.

Write the missing numbers.

68

82 96
+
14

110

124 138
+
14

152

2 marks

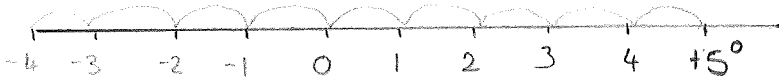


2

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?



9 °C

1 mark

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

What was the temperature on 22nd January?



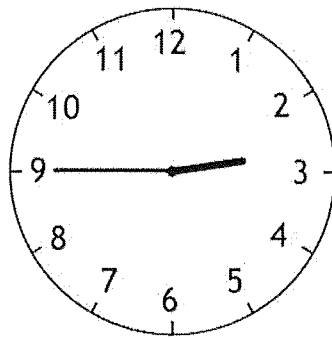
-6 °C

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.

▲			
▲	●	●	▲
▲			

$$\begin{array}{r} 32 \\ 3 \overline{)96} \\ \underline{96} \\ 0 \end{array}$$

$$\begin{array}{r} 090 \\ \times 60 \\ \hline 540 \\ \hline 180 \\ \hline 540 \\ \hline 180 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 18 \\ 2 \overline{)36} \\ \underline{36} \\ 0 \end{array}$$

Total 96
 Total 100

Work out the value of each shape.

$$\triangle = \underline{32}$$

1 mark

$$\circ = \underline{18}$$

1 mark



5

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

~~0.78~~

~~0.607~~

5.6

~~0.098~~

~~4.003~~

0.098

0.607

0.78

4.003

5.6

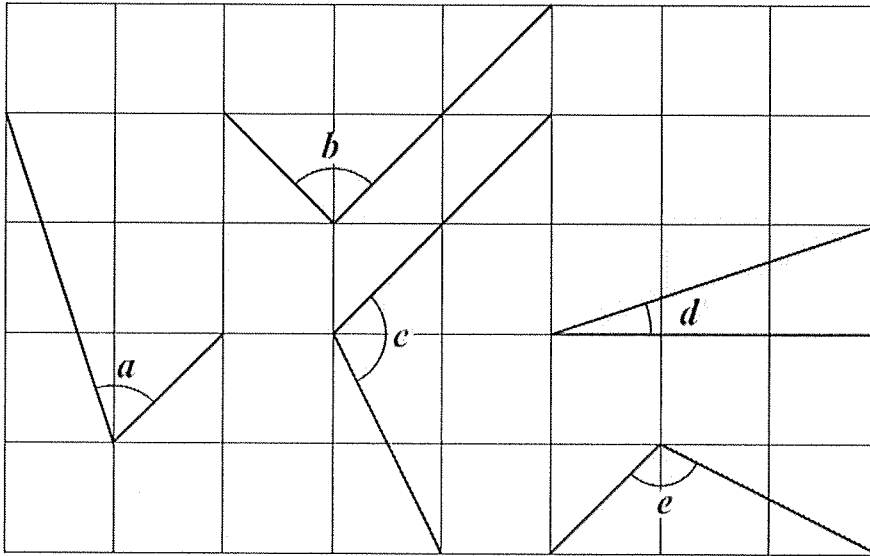
smallest

1 mark



7

Here are five angles marked on a grid of squares.



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

c and e

1 mark

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

a and d

1 mark



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?

$$\begin{aligned}
 10:31 &\rightarrow 11:00 = 29 \text{ min} \\
 11:00 &\rightarrow 11:17 = 17 \text{ min} \\
 \text{Total} &= 46
 \end{aligned}$$

46 minutes

1 mark

Mr Evans is at Fordham at 10:30

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

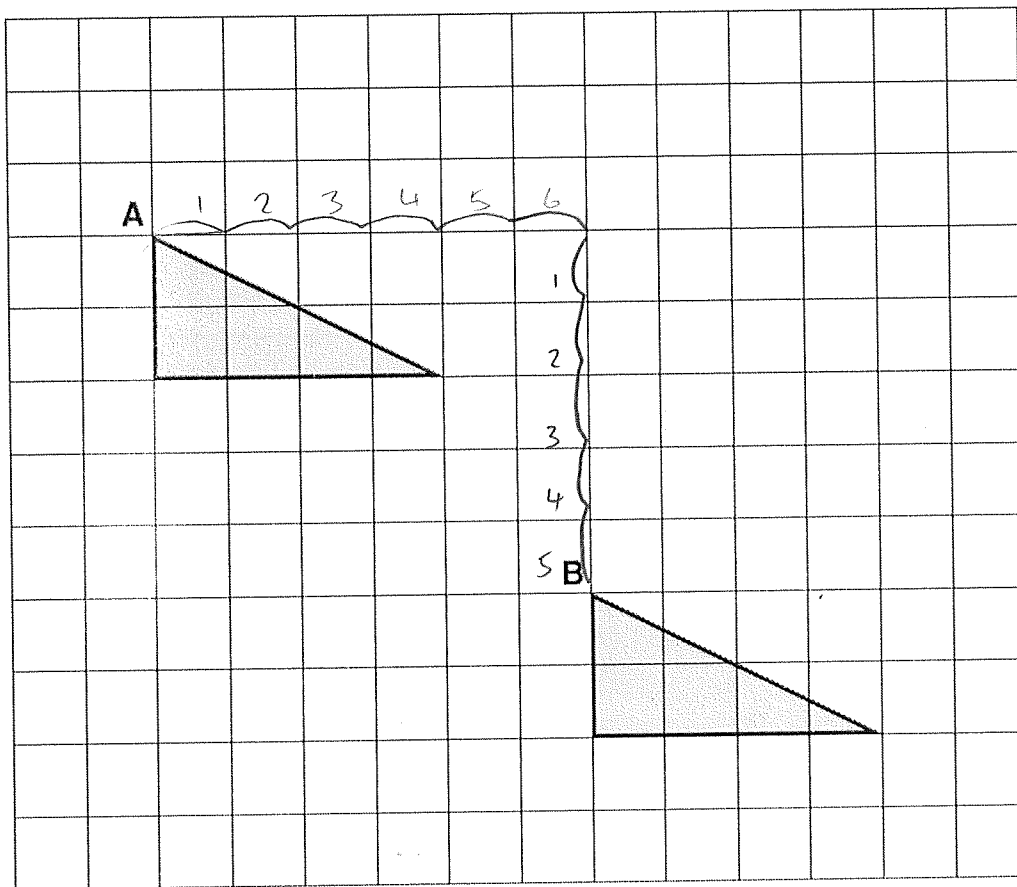
10:44

1 mark



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



14

Complete each sentence using a number from the list below.

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

$$\begin{array}{r} 60 \\ \times 60 \\ \hline 00 \\ 3600 \\ \hline 3600 \end{array}$$

There are seconds in an hour.

1 mark

There are minutes in a day.

1 mark

$$\begin{array}{r} 60 \\ \times 24 \\ \hline 240 \\ 1200 \\ \hline 1440 \end{array}$$

15

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

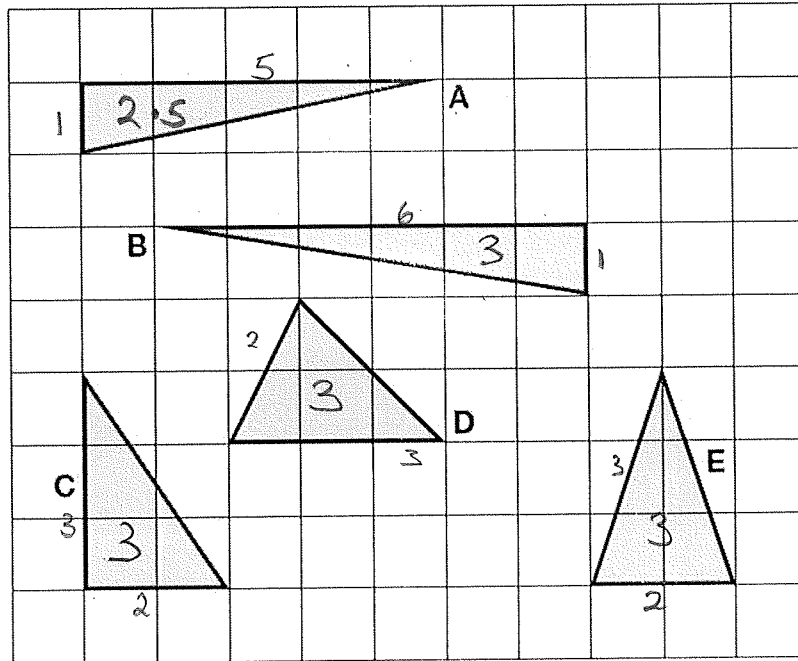
	Rounded to the nearest hundred
20,9 <u>0</u> 6	20 900
2,0 <u>9</u> 0.6	2 100
<u>2</u> 09.06	200

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?

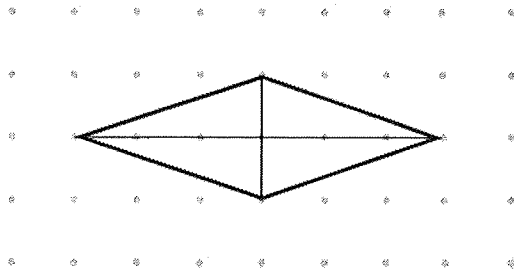
A

1 mark

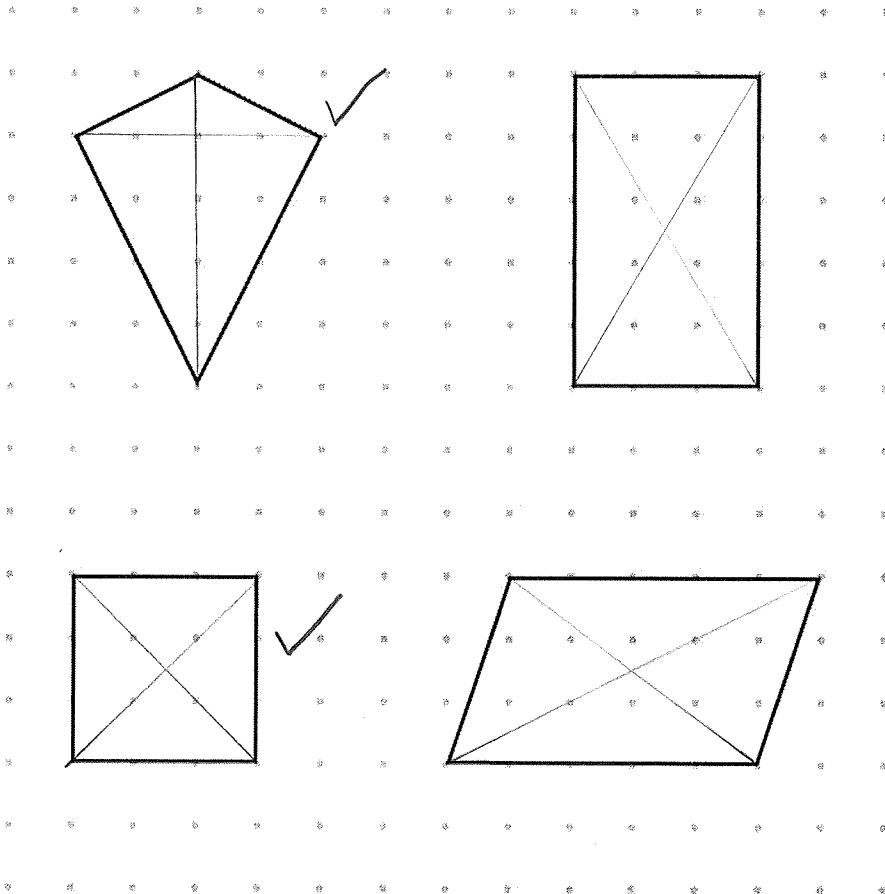


18

The diagonals of this quadrilateral cross at right angles.



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



2 marks



21

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

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

If $5,542 \div 17 = 326$
Then $17 \times 326 = 5542$
So $18 \times 326 = 5542 + 326$
 $18 \times 326 = 5868$

1 mark



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2016 key stage 2 mathematics

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