

Ma

KEY STAGE

2

LEVEL

6

## Mathematics tests

# Paper 1

Calculator **not** allowed

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

2013

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# Instructions

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

Work as quickly and as carefully as you can.

You have **30 minutes** for this test.

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**.

**Follow the instructions for each question carefully.**



This shows where you need to put the answer.

If you need to do working out, you can use any space on a page.

**Some questions have an answer box like this:**

A diagram showing a large rectangular box for an answer. To the left of the box is a label 'Show your working' inside a hexagonal shape. A small pencil icon is positioned above the top-left corner of the box. In the bottom-right corner of the box, there is a smaller rectangular box for the final answer.

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

1

A box of crisps contains three different flavours.



A quarter of the packets are prawn cocktail flavour.

The probability of picking cheese and onion flavour is 30%

What is the probability of picking salt and vinegar flavour?



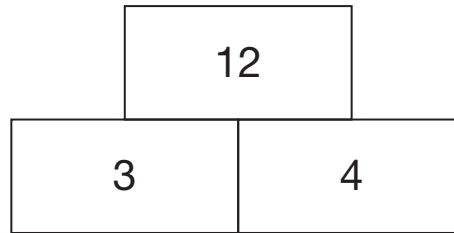
Show  
your  
working



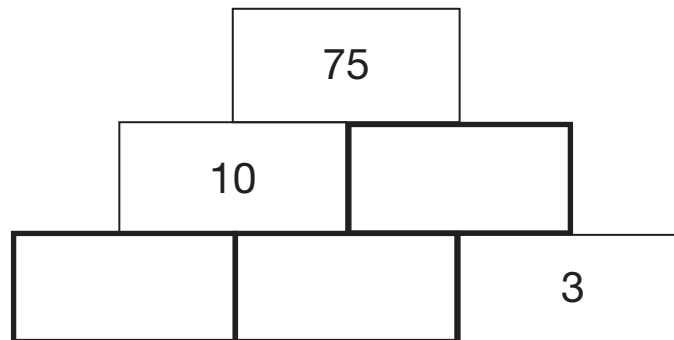
2 marks

**2**

In this tower, two numbers are **multiplied** to give the number above.



Write the missing numbers in the tower below to make it correct.



---

2 marks

3

The following quadrilaterals all have a **perimeter of 36cm**

Here is a table to show the length of each side.

Complete the table.

One quadrilateral is done for you.

	Side lengths			
square	9cm	9cm	9cm	9cm
rectangle	3cm			
rhombus	9cm			
kite	10cm			

2 marks

4

Here is an equation.

$$m - 2n = 10$$

When  $n = 20$  what is the value of  $m$ ?



$m =$  \_\_\_\_\_

1 mark

When  $m = 20$  what is the value of  $n$ ?



$n =$  \_\_\_\_\_

1 mark

5

What is 10% of a half?



1 mark

What percentage of 20 is 19?



%

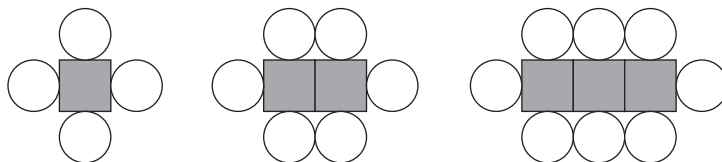
1 mark



6

Here is a sequence of shapes.

Each time a square is added to a shape,  
two more circles are added.



number of squares, <b>s</b>	1	2	3
number of circles, <b>c</b>	4	6	8

The sequence of shapes continues.

The formula for the sequence is  **$c = 2s + 2$**

Calculate the number of circles when the  
number of squares in a shape is **150**



**circles**

1 mark

How many squares are there in a shape that has **100** circles?



Show  
your  
working

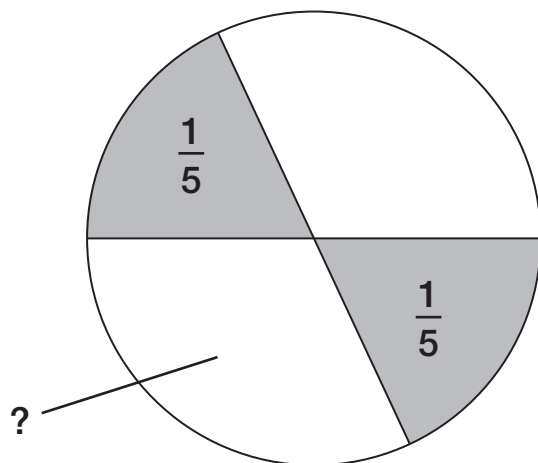
**squares**

2 marks

7

In this circle, each shaded part is  $\frac{1}{5}$  of the area of the circle.

The two white parts have equal areas.

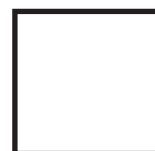


Not  
drawn  
accurately

What fraction of the circle is **one** of the white areas?



Show  
your  
working



2 marks

8

Megan says,

***'If two rectangles have the same perimeter,  
they must have the same area.'***

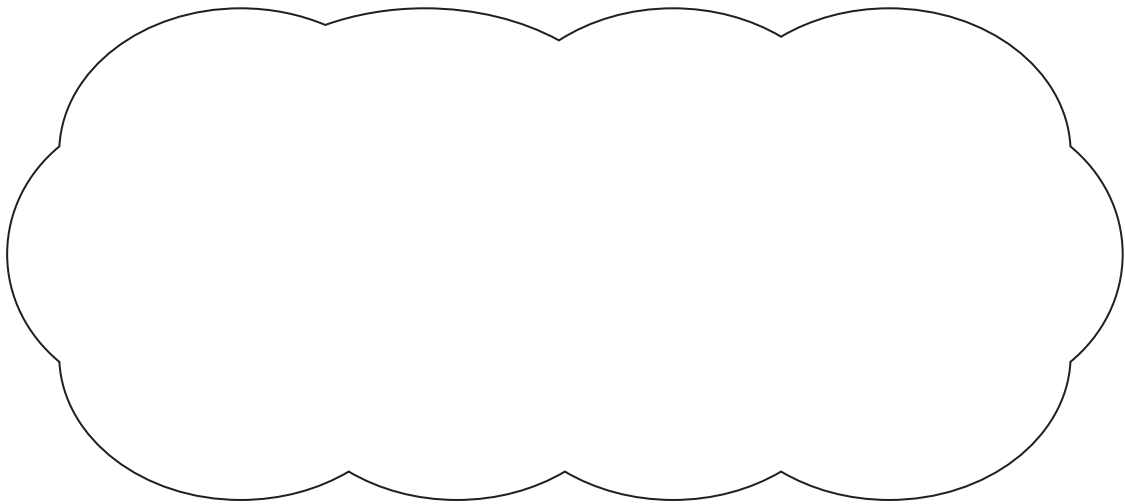
Is she correct?

Circle Yes or No.



Yes / No

Explain how you know.



1 mark

9

A shop makes **100** sandwiches.

All the sandwiches are either cheese or tuna.

Some of the sandwiches also have salad with the cheese or tuna.

30 sandwiches have cheese with salad.

15 sandwiches have tuna without salad.

75 sandwiches have salad.

How many sandwiches have cheese without salad?



Show  
your  
working

2 marks

10

This photograph shows three Russian dolls.



The real-life height of the **largest** Russian doll is **13.5cm**

What is the real-life height of the **smallest** Russian doll?



Show  
your  
working

cm

2 marks

**11**Solve this equation to find the value of  $y$ 

$$8(y + 12) = 100$$



Show  
your  
working

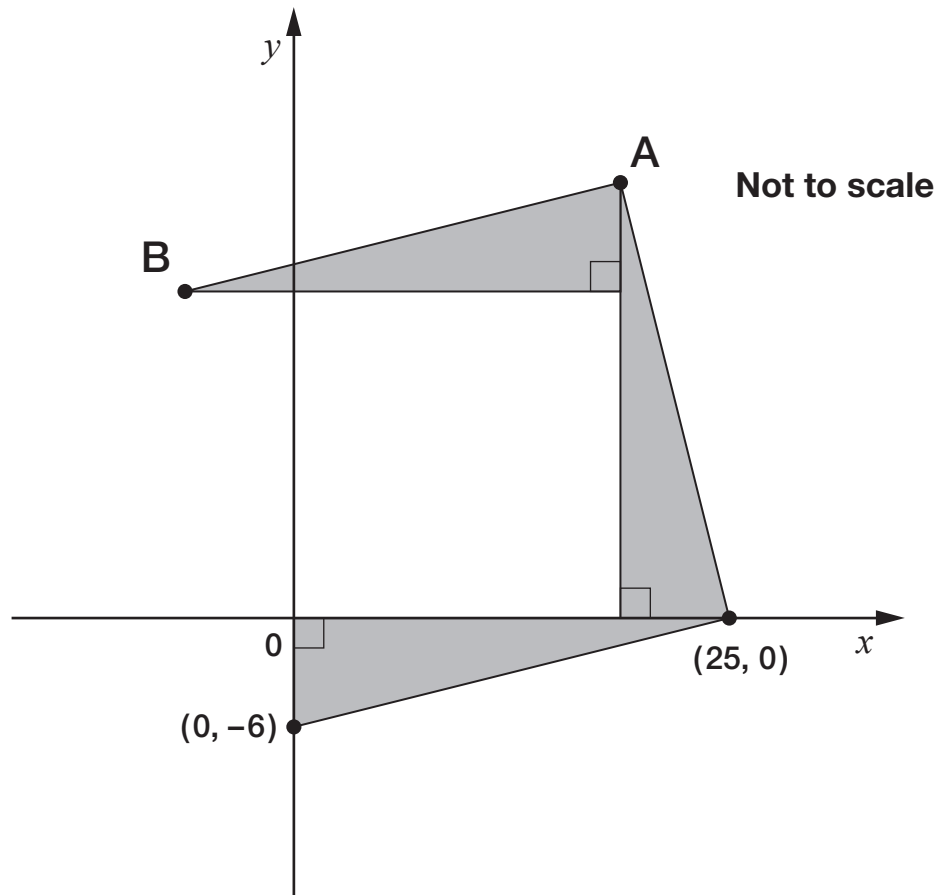
 $y =$ 

---

2 marks

12

The diagram shows three **identical** shaded triangles on coordinate axes.



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



A is ( \_\_\_\_\_ , \_\_\_\_\_ )

1 mark



B is ( \_\_\_\_\_ , \_\_\_\_\_ )

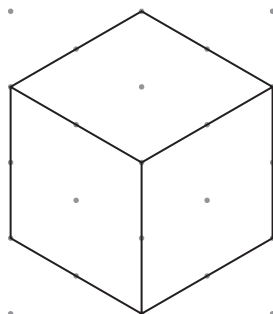
1 mark

13

Here is a drawing of a cube on an isometric grid.

Draw a cuboid that has:

- the **same** volume
- **half** the height.



2 marks



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Standards  
& Testing  
Agency

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