

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

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%

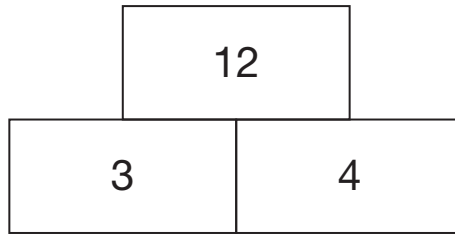
What is the probability of picking salt and vinegar flavour?

Show
your
working

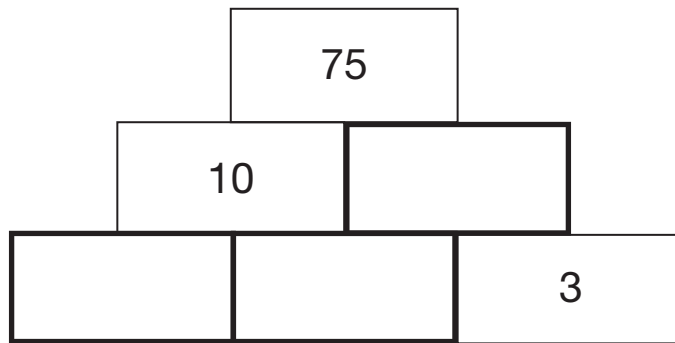
2 marks

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 ?



$m = \underline{\hspace{2cm}}$

1 mark

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



$n = \underline{\hspace{2cm}}$

1 mark

5

What is 10% of a half?



1 mark

What percentage of 20 is 19?



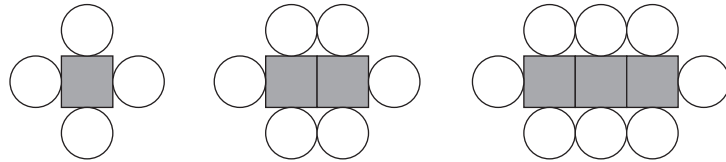
%

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, s	1	2	3
number of circles, c	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

Working area for the calculation.

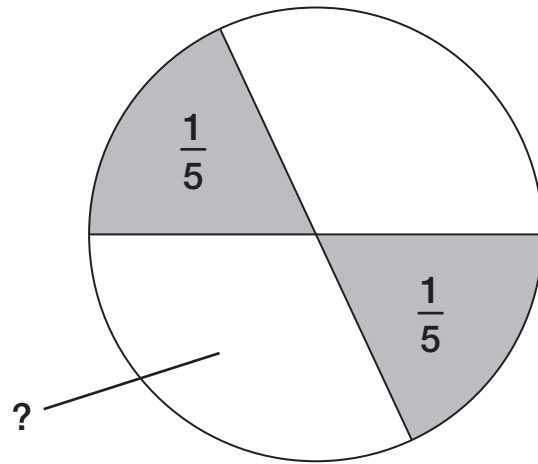
squares

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.'***

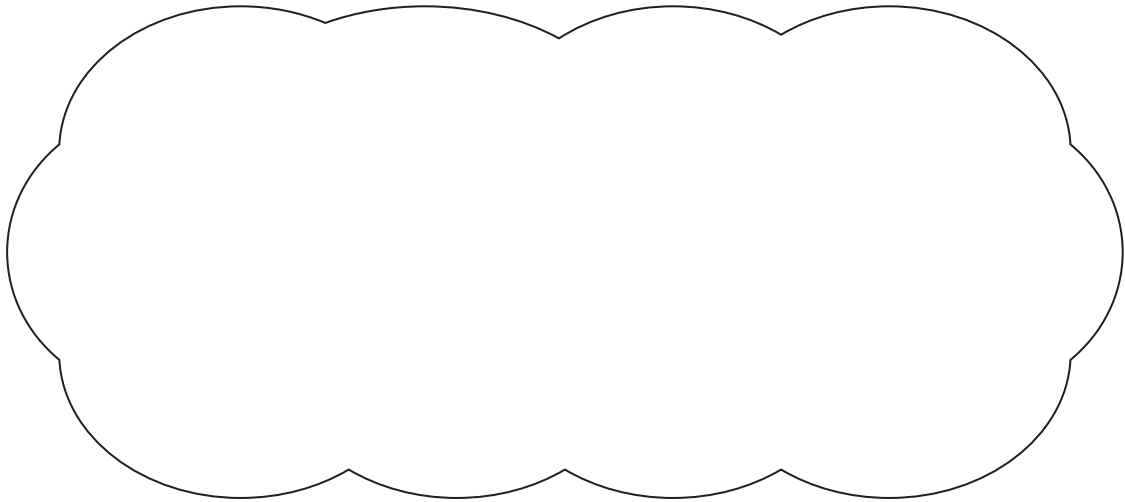
Is she correct?

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

11Solve this equation to find the value of y

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



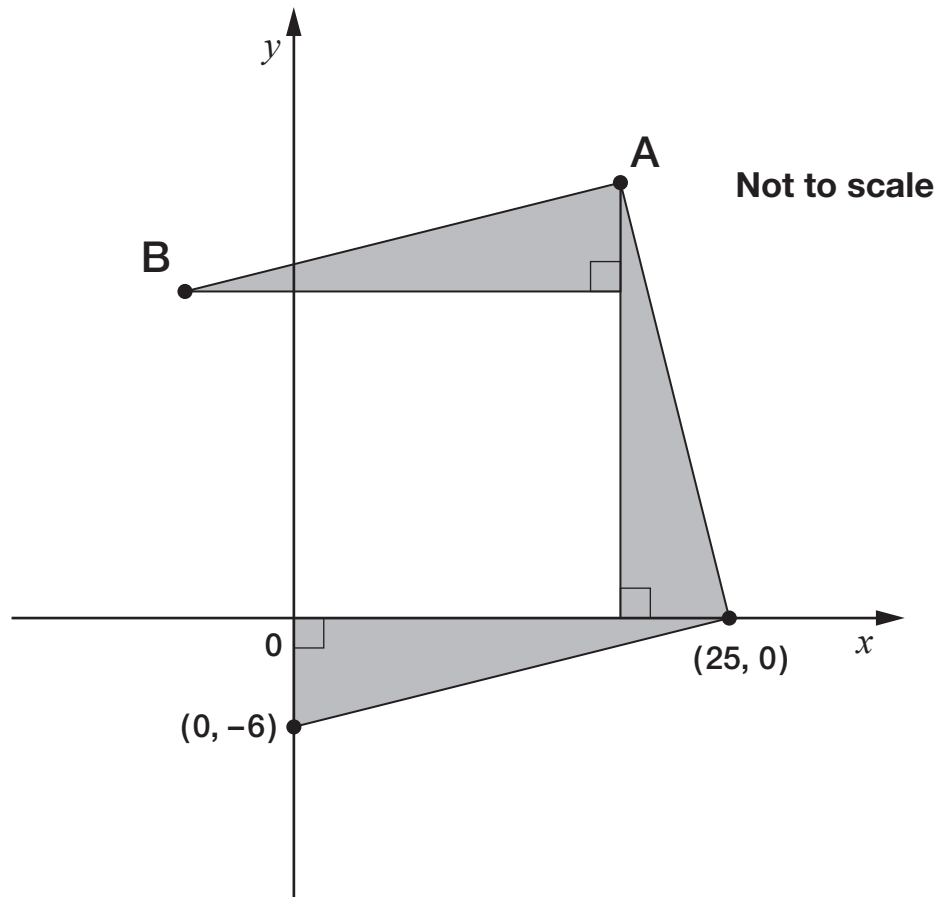
Show
your
working

 $y =$

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 (_____ , _____)

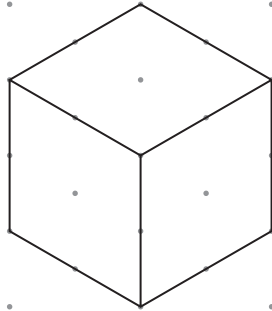
1 mark

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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Mathematics tests

Paper 2

Calculator allowed

First name						
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2013

1 x stands for an **odd** number. y stands for an **even** number.

Look at the expressions below.

For each expression, tick to show if it is odd or even.

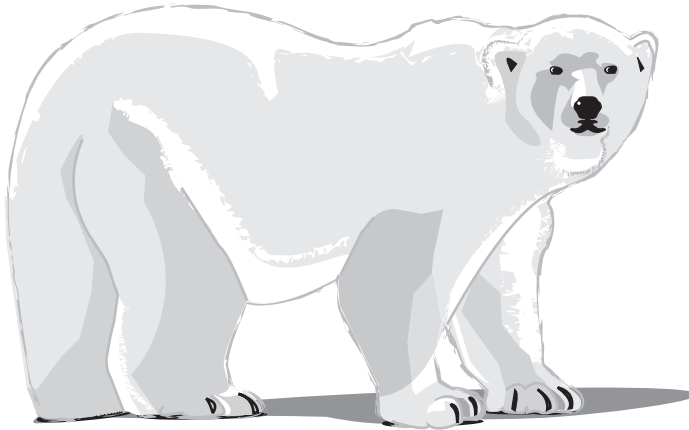
The first one is done for you.

	odd	even
 $x + y$	<input checked="" type="checkbox"/>	<input type="checkbox"/>
$x + 2y$	<input type="checkbox"/>	<input type="checkbox"/>
$2(x + y)$	<input type="checkbox"/>	<input type="checkbox"/>
xy	<input type="checkbox"/>	<input type="checkbox"/>
$x^2 + y$	<input type="checkbox"/>	<input type="checkbox"/>

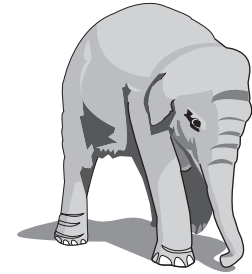
2 marks

2

In a zoo, the adult polar bear weighs three times more than the baby elephant.



polar bear



elephant

Together they weigh **700** kilograms.

How much does the polar bear weigh?



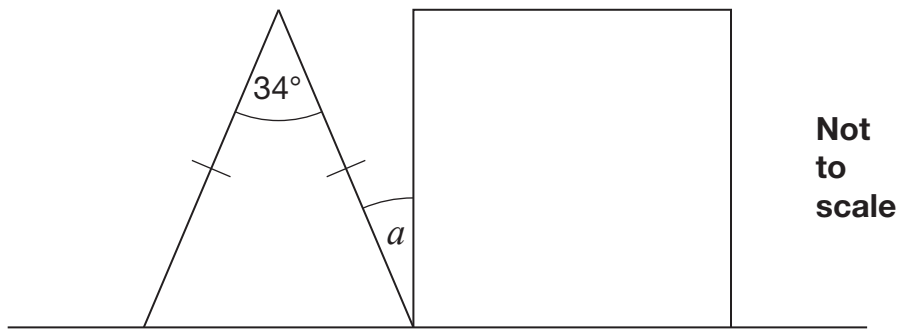
Show
your
method

kg


2 marks

3

The diagram shows an isosceles triangle and a square on a straight line.



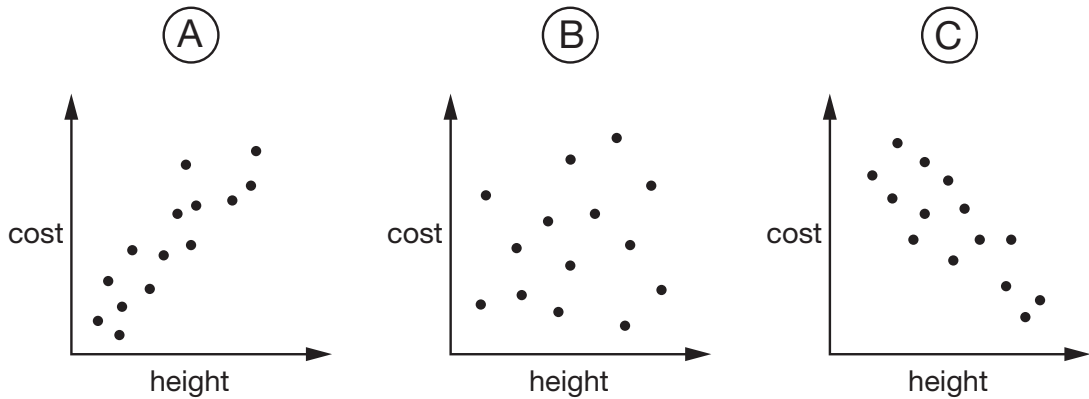
Calculate angle a .

 Show your method

2 marks

4

Here are three scatter graphs showing the heights of people and the cost of clothes.



Chen says,

'The taller you are, the more your clothes cost.'

Megan says,

'The shorter you are, the more your clothes cost.'

Alfie says,

'There is no relationship between your height and what your clothes cost.'

Write the letter of each scatter graph that shows what each person says.



Chen _____ Megan _____ Alfie _____

1 mark

5

Chen chooses a **prime** number.

He multiplies it by 10 and then rounds it to the nearest hundred.

His answer is **400**

Write **all** the possible prime numbers Chen could have chosen.

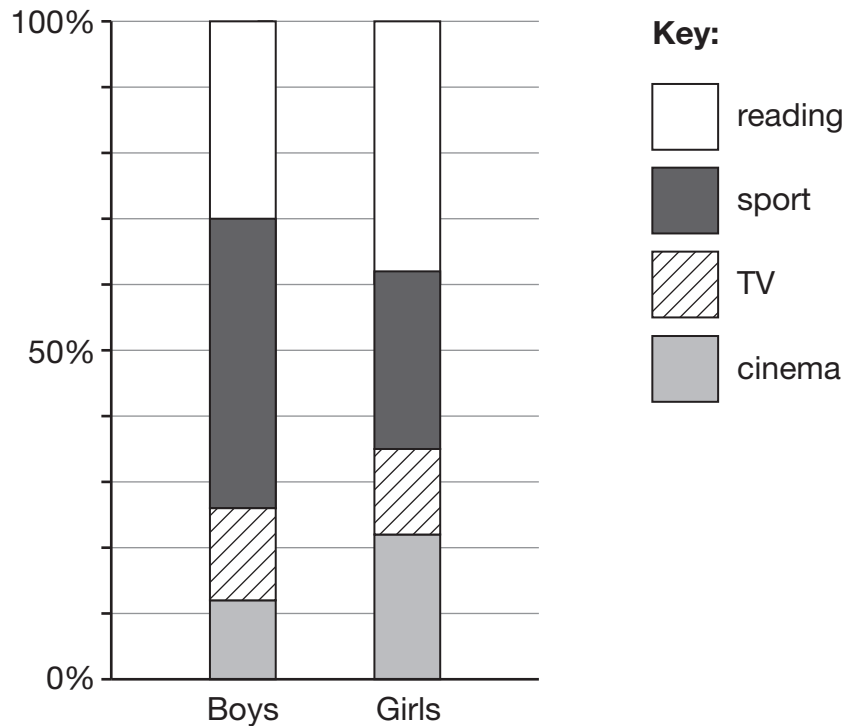


2 marks

6

Alfie asks some boys and girls about their favourite hobby.

He shows the results on a graph.



The graph shows that **44%** of boys chose sport.

Estimate the percentage of **girls** who chose sport.



%

1 mark

120 boys chose reading.

Estimate the **number** of boys who chose **cinema**.



boys

1 mark

7

Megan goes on a walking holiday for five days.

The table shows how far she walked on the first four days.

Monday	Tuesday	Wednesday	Thursday
14km	23km	13km	13km

Megan says,

'My average for the first four days is more than 15km.'

Explain why Megan is **correct**.



1 mark

Friday is her last day.

She wants to increase her average to **17km**

How many kilometres must she walk on Friday?

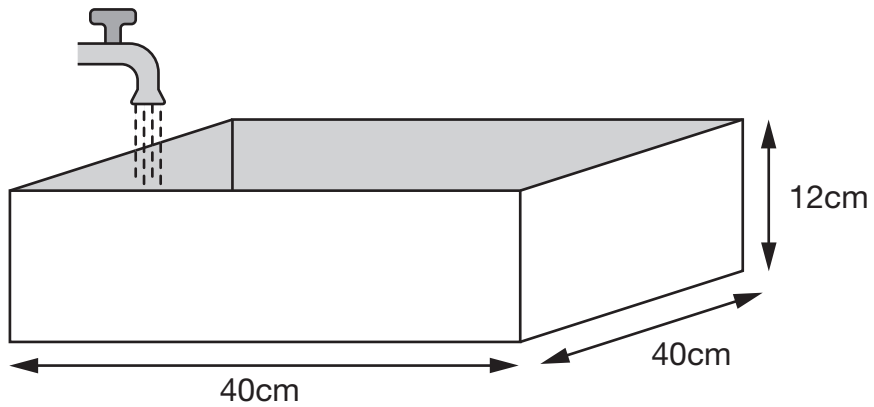


Show
your
method

2 marks

8

Every second, 300cm^3 of water comes out of a tap into a cuboid tank.



**Not
actual
size**

The base of the tank is **40cm** by **40cm**

The height is **12cm**

How many seconds does it take to fill the tank?



Show
your
method

seconds

2 marks

9

y stands for a number.

$$y \times y \times y = 5$$

The most accurate value for y to **one decimal place** is 1.7 because

$$1.7 \times 1.7 \times 1.7 = 4.913$$

k stands for a number.

$$k \times k \times k = 10$$

Find the most accurate value for k correct to **one decimal place**.



Show
your
method

$k =$

2 marks

10

A box of sticky labels costs £33.50

There are 150 sheets of labels in the box.

There are 14 labels on each sheet.



What is the cost of one label **to the nearest penny**?



Show
your
method

A large rectangular box for showing the method. In the bottom right corner of this box, there is a smaller rectangular box containing the letter 'p'.

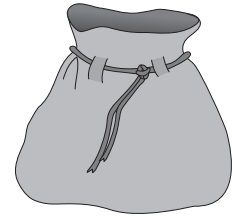
2 marks

11

A bag contains 35 red counters only.

Chen adds green counters to the bag.

The probability of picking a **green** counter is now **0.3**



How many green counters did Chen add?

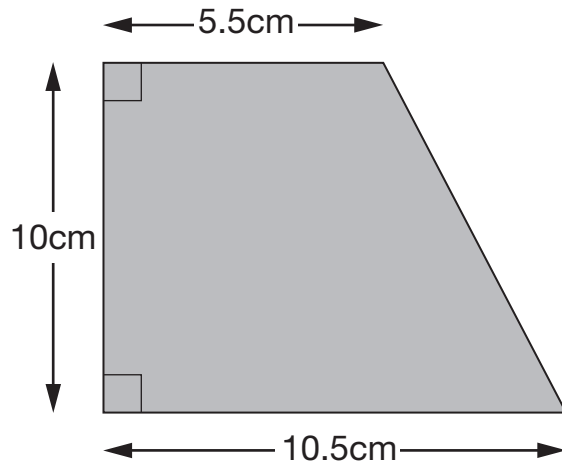


Show
your
method

2 marks

12

Here is a trapezium with a height of 10 centimetres.



Not
actual
size

The parallel sides are 5.5cm long and 10.5cm long.

Find the **area** of the trapezium.



Show
your
method

cm²

2 marks