

Ma

KEY STAGE

2

LEVEL

6

## Mathematics tests

# Paper 2

Calculator allowed

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

2013

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Please do not write on this page.

# Instructions

You **may** 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**.

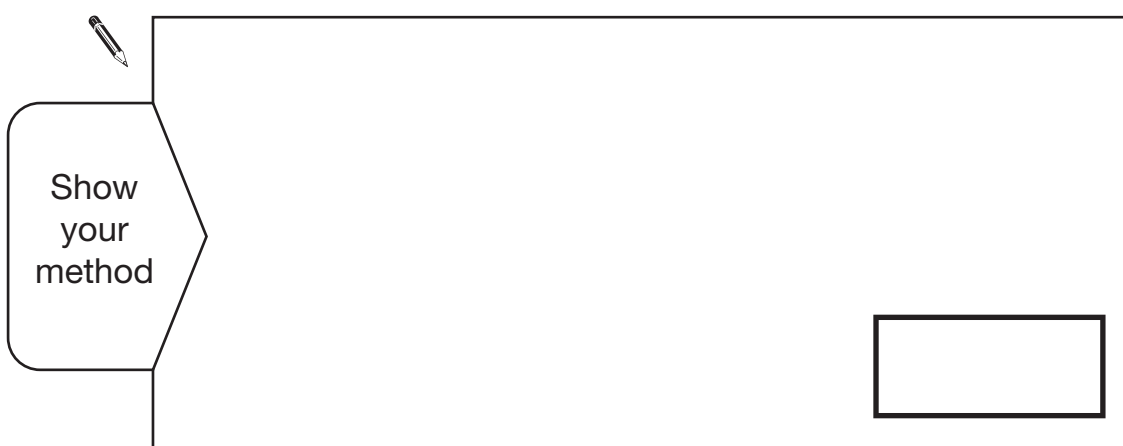
**Follow the instructions for each question carefully.**



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:**



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

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.

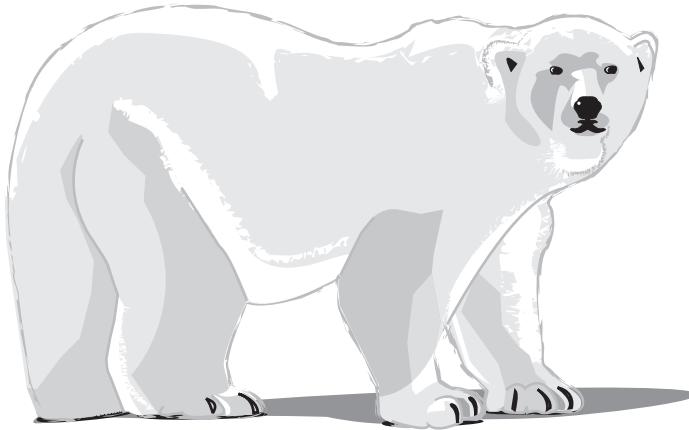
	odd	even
 $x + y$	<input checked="" type="checkbox"/>	<input type="checkbox"/>
$x + 2y$	<input type="checkbox"/>	<input type="checkbox"/>
$2(x + y)$	<input type="checkbox"/>	<input type="checkbox"/>
$xy$	<input type="checkbox"/>	<input type="checkbox"/>
$x^2 + y$	<input type="checkbox"/>	<input type="checkbox"/>

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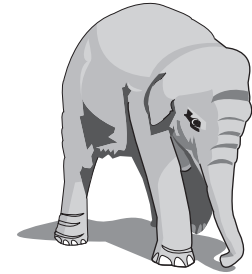
2 marks

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?



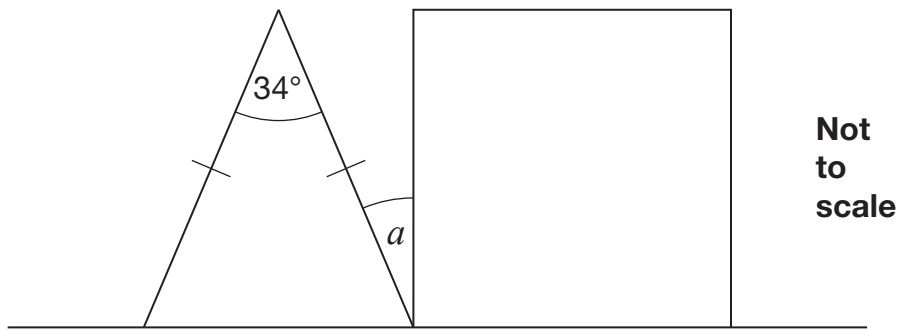
Show  
your  
method

A large rectangular box for writing the solution. In the bottom right corner of this box, there is a smaller rectangular box containing the text "kg".

2 marks

3

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



Not  
to  
scale

Calculate angle  $a$ .

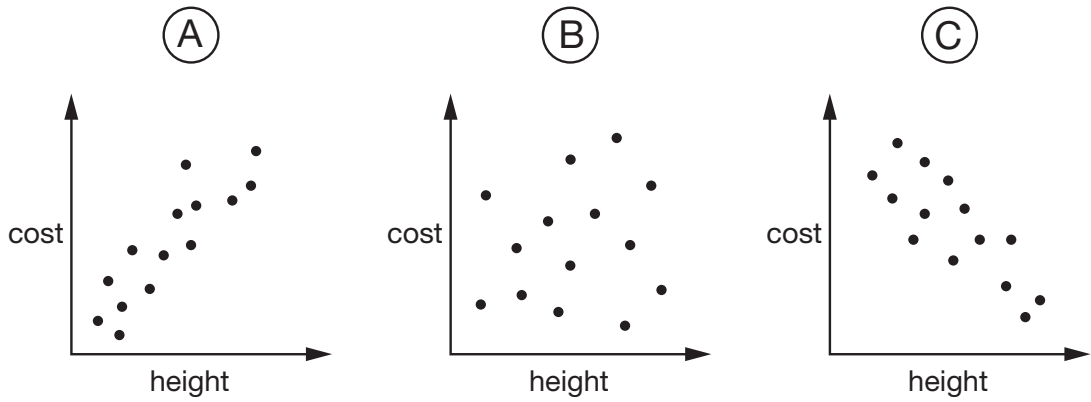


Show your method

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.



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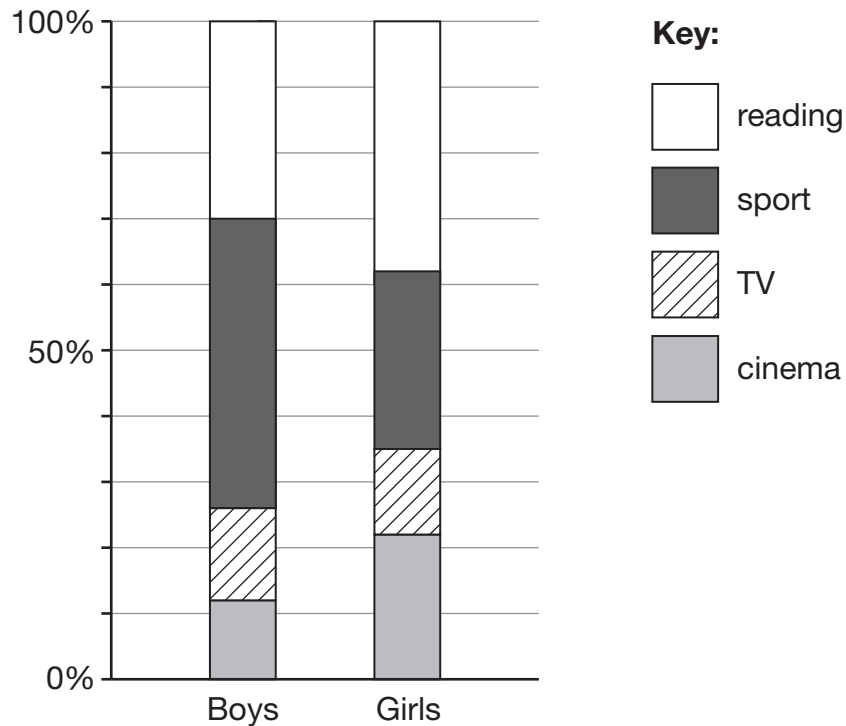
2 marks



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?

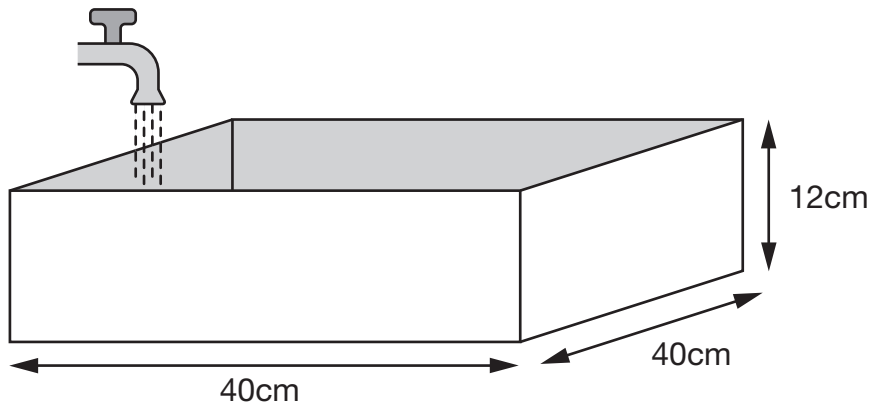


Show  
your  
method

2 marks

8

Every second,  $300\text{cm}^3$  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'.

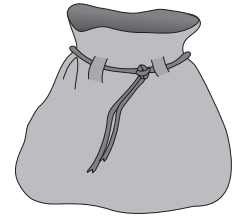
2 marks

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?

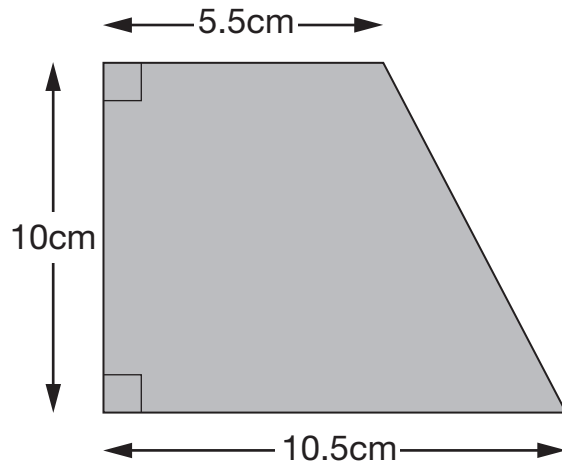


Show  
your  
method

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

cm<sup>2</sup>

2 marks



Standards  
& Testing  
Agency

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