

Ma

KEY STAGE

2

LEVEL

6

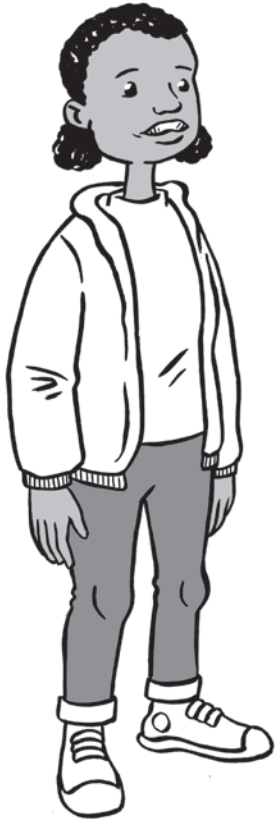
## Mathematics tests

# Paper 2

Calculator allowed

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

2012



Cleo



Jon



Runa

# Instructions

You **may** use a calculator to answer any questions in this test paper.

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- Work as quickly and as carefully as you can.
  - You have 30 minutes for this test paper.
  - 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.

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

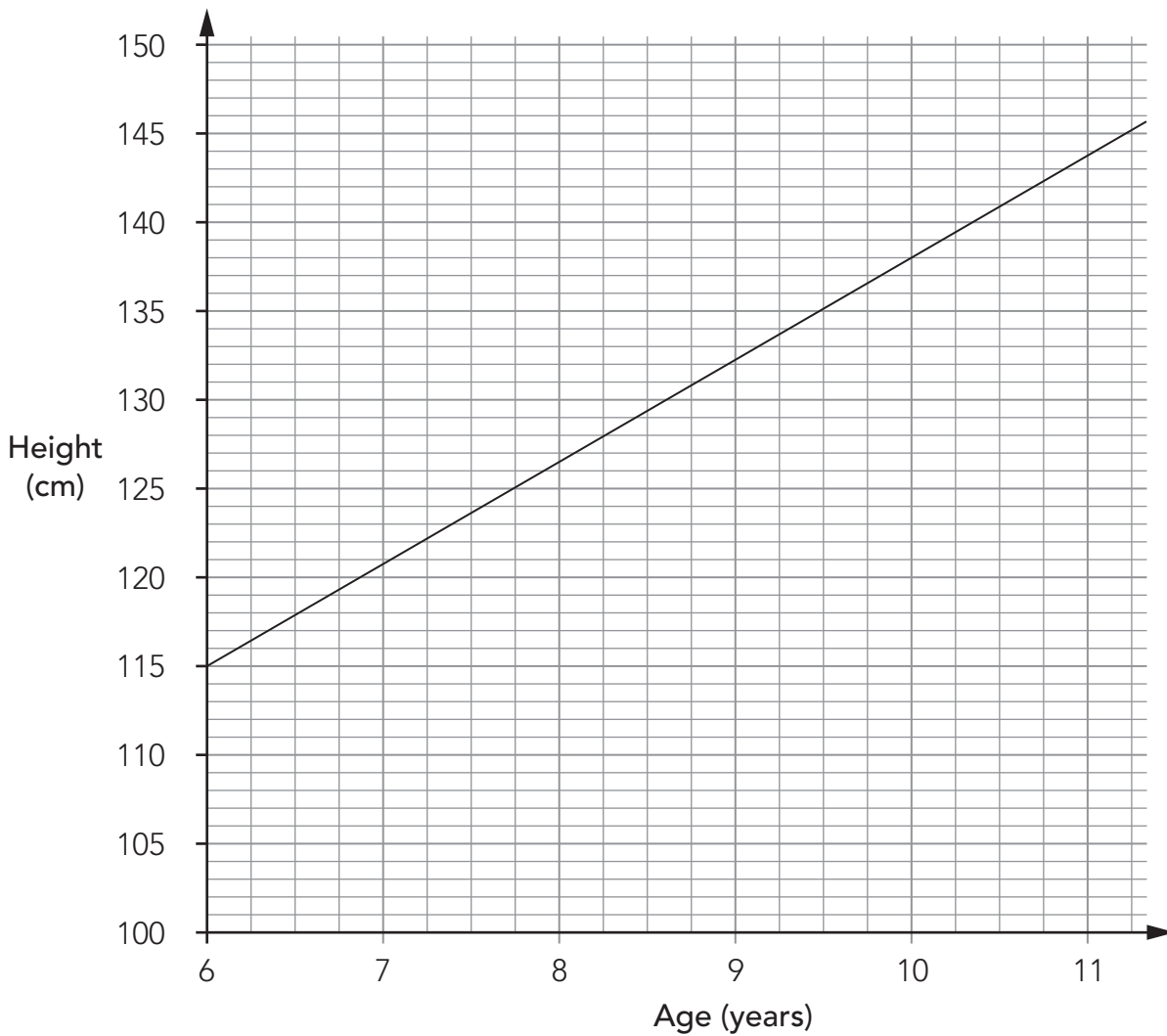


The diagram shows a large rectangular box representing an answer area. On the left side, there is a callout box with a pencil icon pointing to it. The callout box is a rounded rectangle with a pointed right side, containing the text "Show your method". In the bottom right corner of the large rectangular box, there is a smaller, empty rectangular box representing an answer box.

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

1

The graph shows the average heights of girls in the UK from age 6 – 11 years.



Emily is **1.38m** tall.

She is the **average** height for her age.

How old is she?



(1 mark)

Zoe is  **$9\frac{1}{2}$**  years old.

She is also 1.38m tall.

How much taller than average is she?

Give your answer in centimetres.

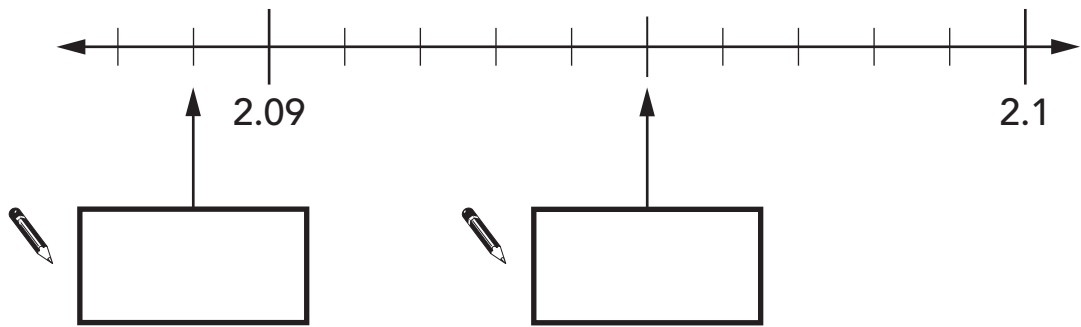


(1 mark)

2

This is part of a number line.

Write in the missing numbers.



(1 mark)

(1 mark)

3

Runa and Jon are playing a game using a fair six-sided dice.

Runa throws the dice first, then Jon.



Jon wins the game if his number is **greater** than Runa's.

Runa throws the dice.  
It shows **3**



What is the probability that Jon will win the game?



(1 mark)

Runa throws the dice again.

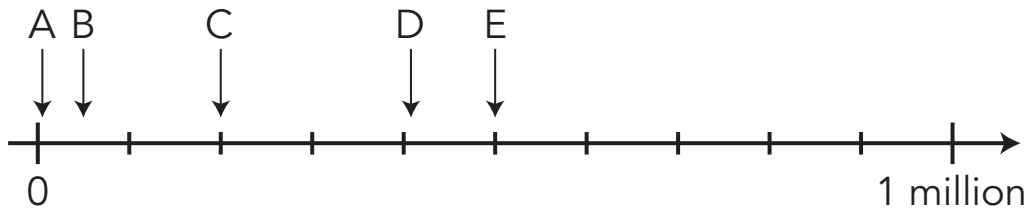
The probability that Jon will win this game is  $\frac{1}{3}$

What **number** did Runa throw?



(1 mark)

4



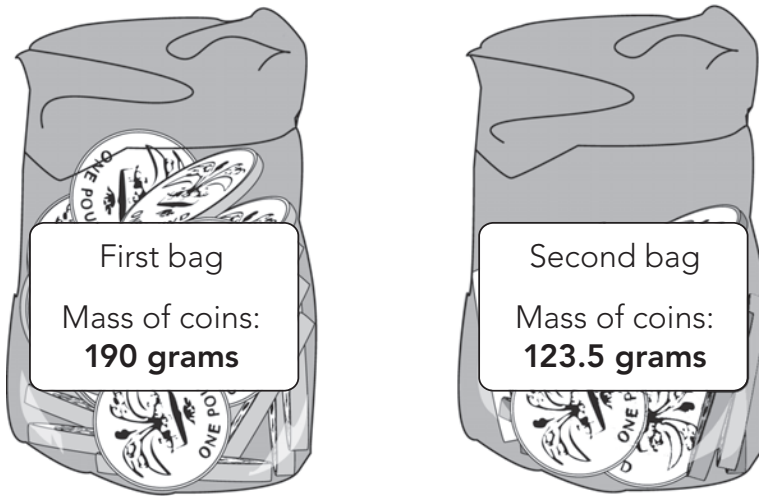
Write the letter of the arrow that points to the number 50000



\_\_\_\_\_ (1 mark)

5

Here are two plastic bags of £1 coins.



The **first** bag contains **20** £1 coins.

How many £1 coins does the **second** bag contain?

Show your method

(2 marks)



---

6

Which square number is **closest** to 1000?



(1 mark)

**7**

The box below shows **all** the possible values for  $x$ .

$x$  is a whole number.


**$40 < x < 45$**

$x$  could be 41, 42, 43 or 44

Write **all** the possible values for  $k$ .

$k$  is a whole number.


**$29 < 2k < 35$**

  $k$  could be \_\_\_\_\_

Write **all** the possible values for  $w$ .

$w$  is a whole number.

**$18 < 3w + 1 < 24$**

  $w$  could be \_\_\_\_\_

(3 marks)

---

8

The factors of 11 sum to 12

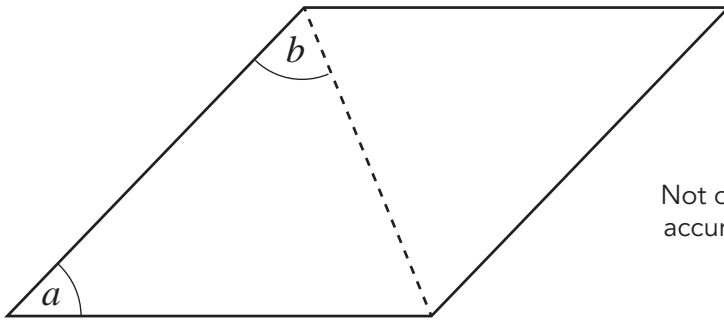
Write the other number whose factors sum to 12



(1 mark)

9

The dotted line is a diagonal of this **rhombus**.



Not drawn accurately

If angle  $a = 80^\circ$ , what is angle  $b$ ?

Show  
your  
method



If angle  $b = 80^\circ$ , what is angle  $a$ ?



(3 marks)

---

**10**

Look at these equations.

$$a = 2b$$

$$b = 3c$$

Which equation below is also true?

Put a ring round the correct one.



$$b = 2a$$

$$a = 2b + 3c$$

$$a = 5c$$

$$a = 6c$$

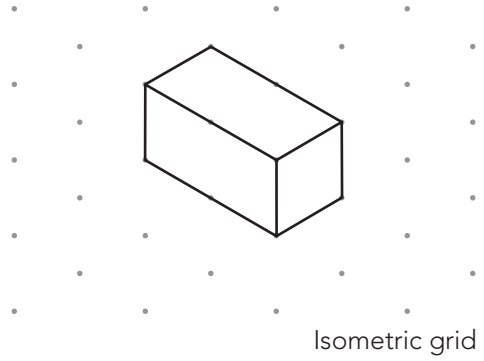
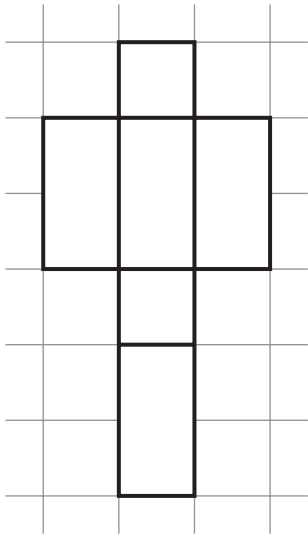
$$a + b = 5$$

(1 mark)

11

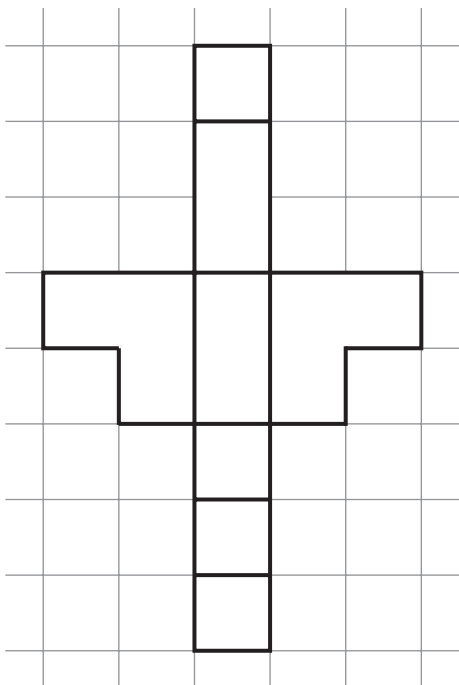
Look at the net drawn on square paper.

It folds to make a prism.



The net below folds to make a different prism.

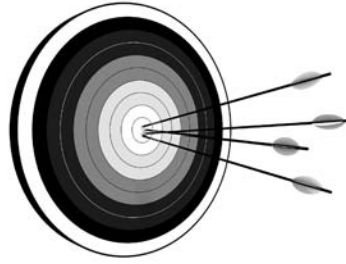
Draw it on the grid.



(2 marks)

# 12

Archery is an Olympic sport.



In 2008, two archers called Park and Zhang were in the women's final.

Both archers shot **12 arrows**.

**Zhang won** the final **by 1** point.

Complete the table for Zhang below.

You can use the space to show your calculations.

Show your method

Name of archer: <b>Park</b>		Name of archer: <b>Zhang</b>	
What she scored with her <b>12 arrows</b>		What she scored with her <b>12 arrows</b>	
Number of points	Frequency	Number of points	Frequency
7	0	7	1
8	4	8	0
9	3	9	
10	5	10	

(2 marks)

13

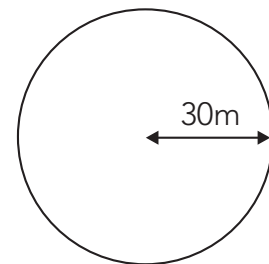
The photograph shows a crop circle that was made in Mexico. People flattened crops to make a pattern inside a circle.



Some people are planning to make a crop circle.

Here is what they plan to do:

- They will make a circle of radius **30m**.
- They will flatten about **60%** of the area of the circle.
- Together, they can flatten **450m<sup>2</sup>** in **one hour**.



**The question is on the next page.**



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About how many hours do the people plan to spend making the crop circle?

You will need to use this formula:

The area of a circle is  $3.142 \times (\text{radius})^2$



Show  
your  
method

hours (to the nearest hour)

(3 marks)

**END OF TEST**

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**END OF TEST**

The photograph on page 16 of this test paper  
has been provided courtesy of Greenpeace.

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STA/12/5685 (Pupil pack)  
STA/12/5686 (Mark scheme pack)