Maths Common Entrance SATS (Level 6) Exam Test

Mathematics

Sample 4

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Educational Development

Instructions

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

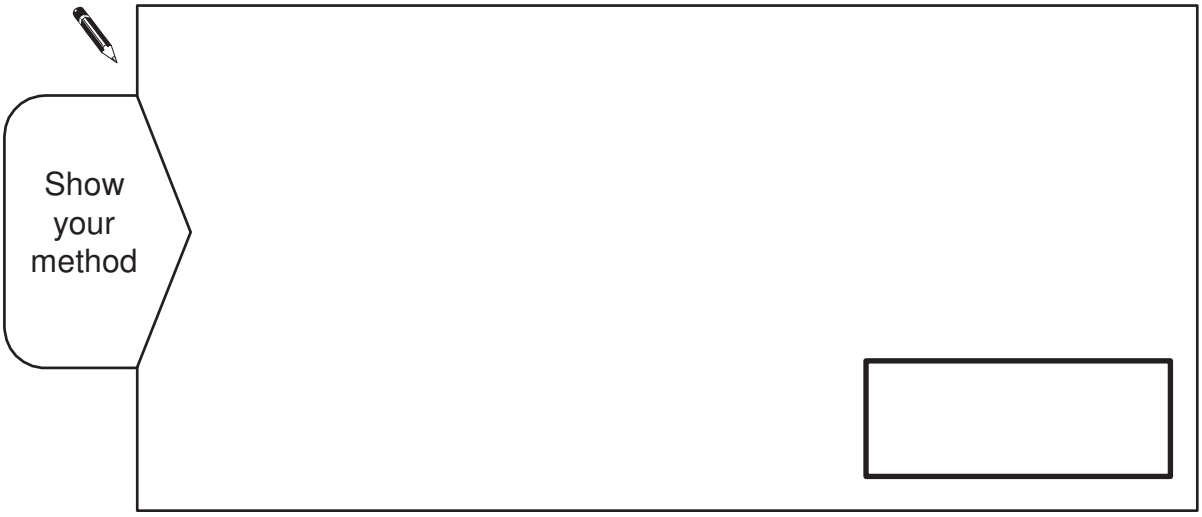
- Work as quickly and as carefully as you can.
- You have 30 minutes for this test paper.
- If you cannot do one of the questions, **go on to the next one**.
  You can come back to it later, if you have time.
- If you finish before the end, **go back and check your work**.

Follow the instructions for each question carefully.

This shows where you need to put the answer.

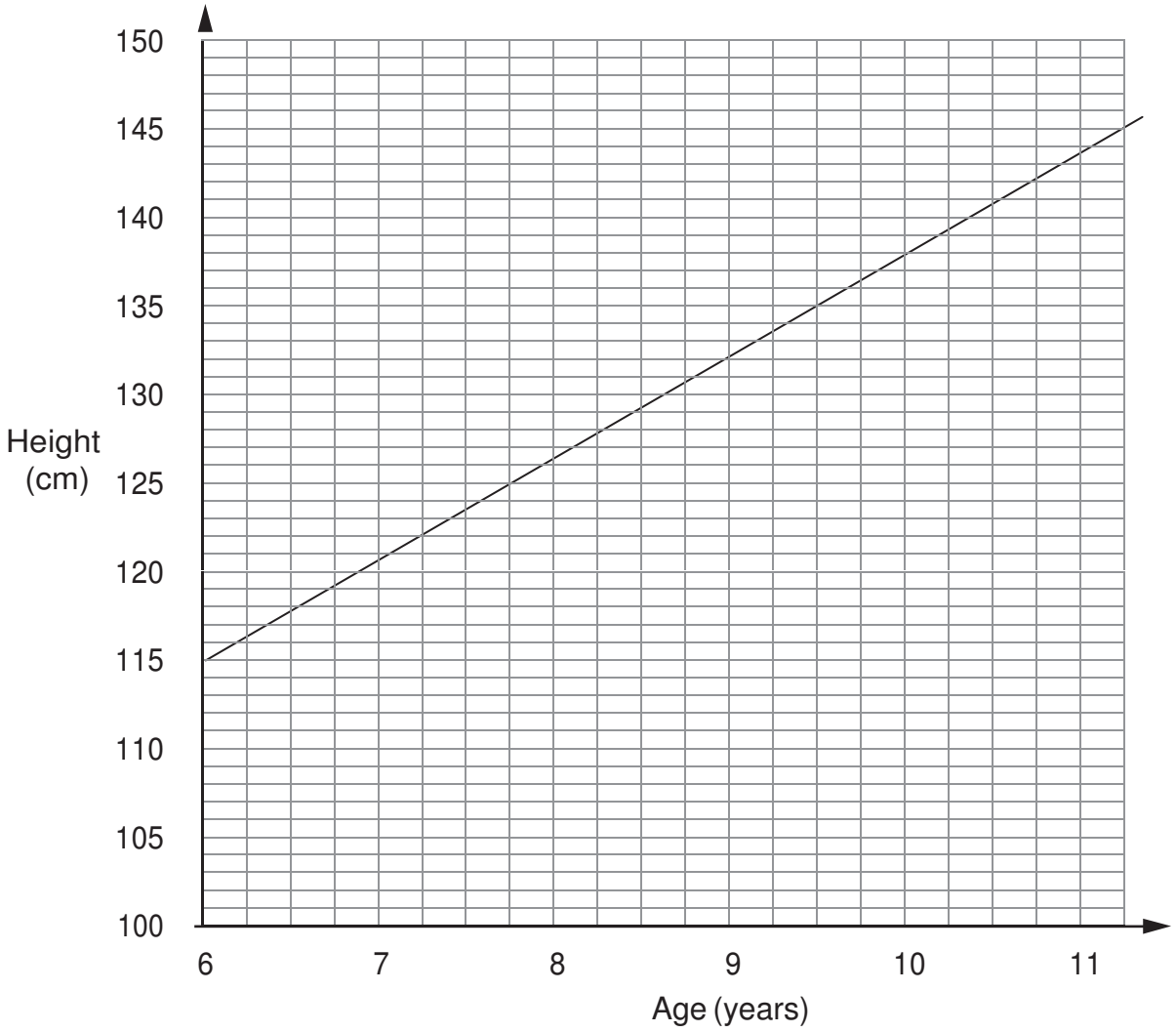
If you need to do working out, you can use any space on a page.

Some questions have an answer box like this:



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?

years old

(1 mark)

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

She is also 1.38m tall.

How much taller than average is she?

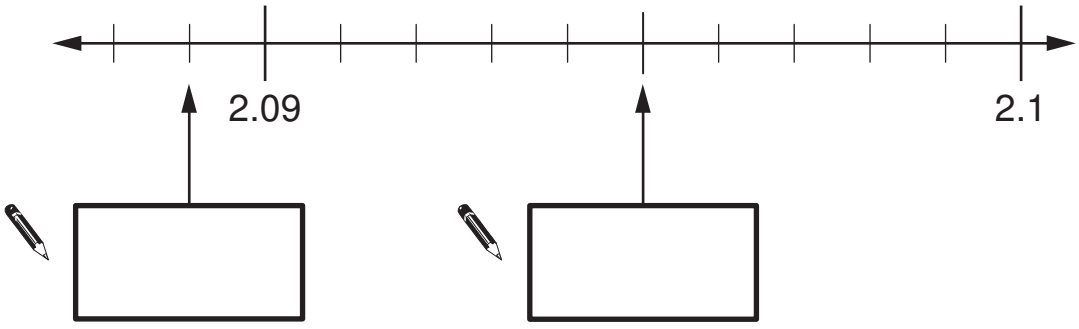
Give your answer in centimetres.

cm

(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)

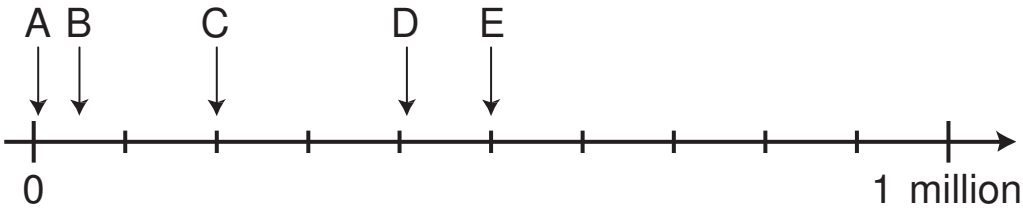
Runa throws the dice again.

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

What **number** did Runa throw?

(1 mark)

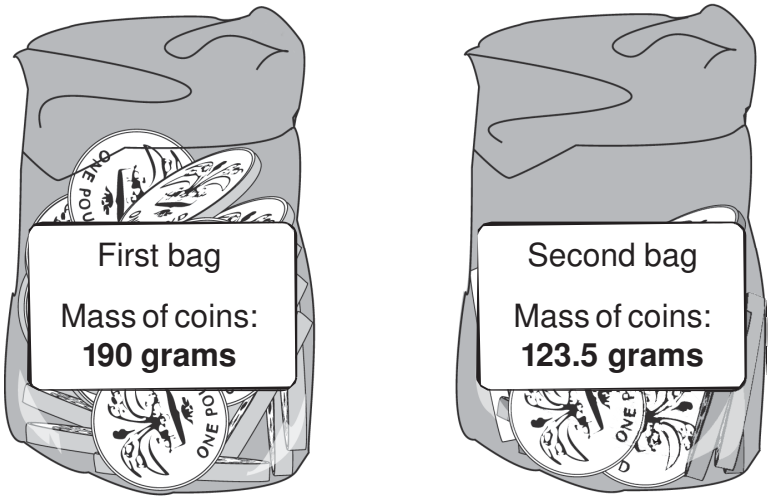
4



Write the letter of the arrow that points to the number 50 000

_____ *(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 _____

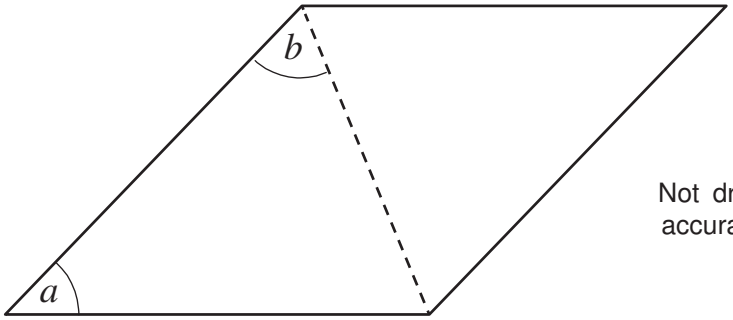
(3 marks)

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 $a = 80°$, what is angle b?

Show your method

°

If angle $b = 80°$, what is angle a?

°

(3 marks)

10 Look at these equations.

$$a = 2b$$

$$b = 3c$$

Which equation below is also true?

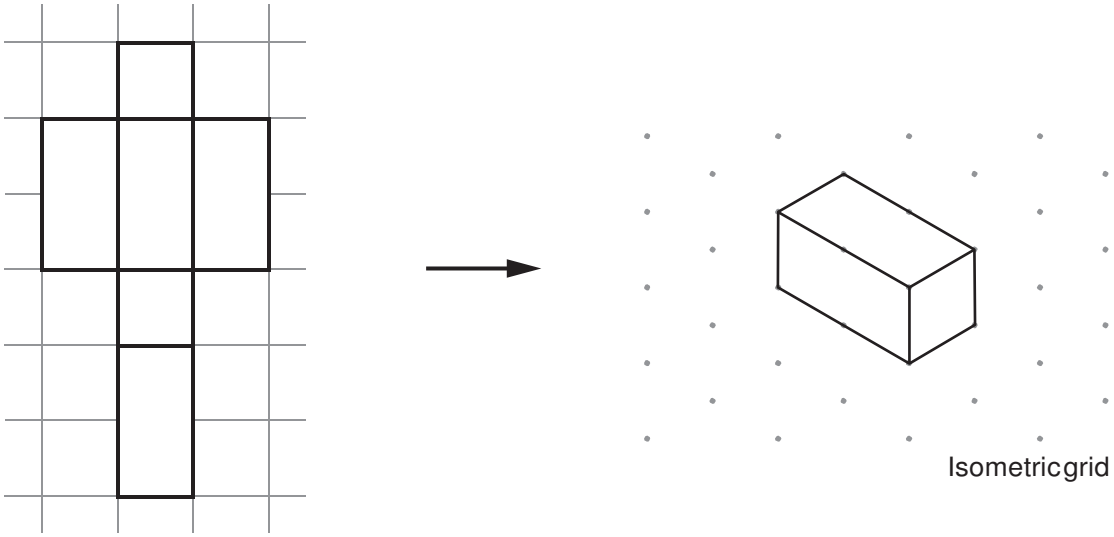
Put a ring round the correct one.

$b = 2a$ $a = 2b + 3c$ $a = 5c$

$a = 6c$ $a + b = 5$ *(1 mark)*

11 Look at the net drawn on square paper.

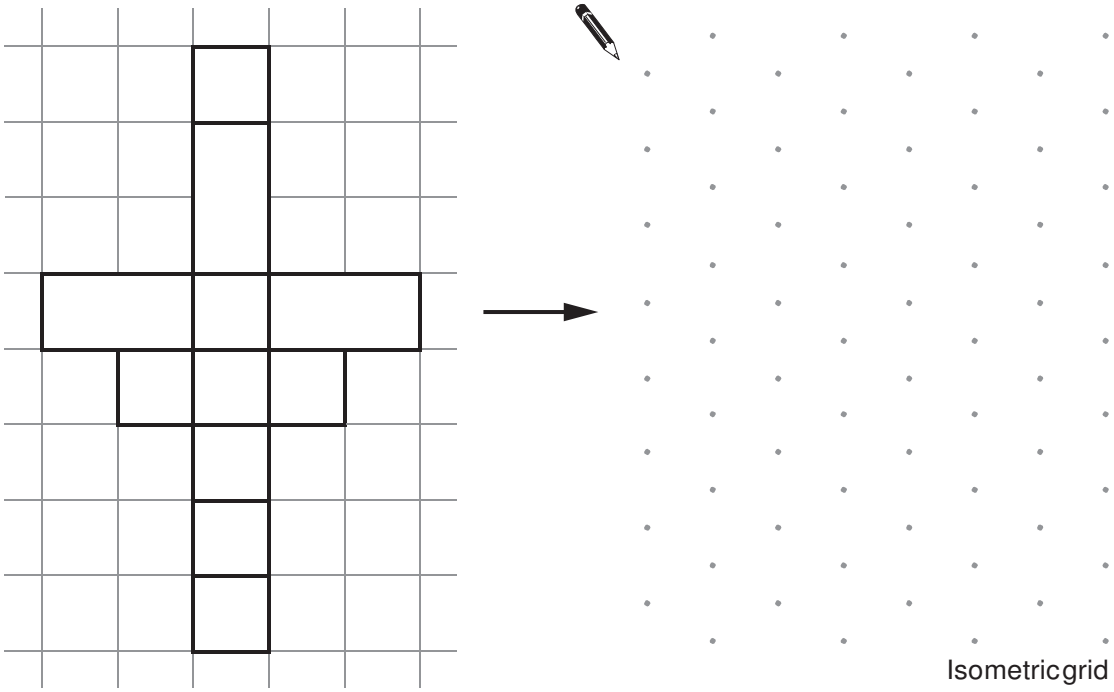
It folds to make a prism.



Isometric grid

The net below folds to make a different prism.

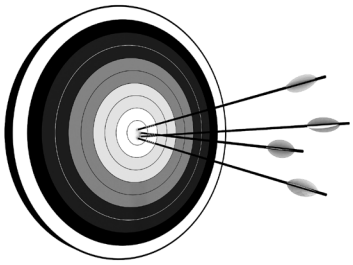
Draw it on the grid.



Isometric 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: **Park**	
What she scored with her **12 arrows**	
Number of points	Frequency
7	0
8	4
9	3
10	5

Name of archer: **Zhang**	
What she scored with her **12 arrows**	
Number of points	Frequency
7	1
8	0
9	
10	

(2 marks)

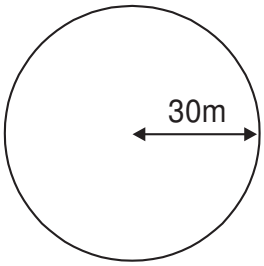
13 The photograph shows a crop circle that was made in Mexico.

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 **450m²** in **one hour**.

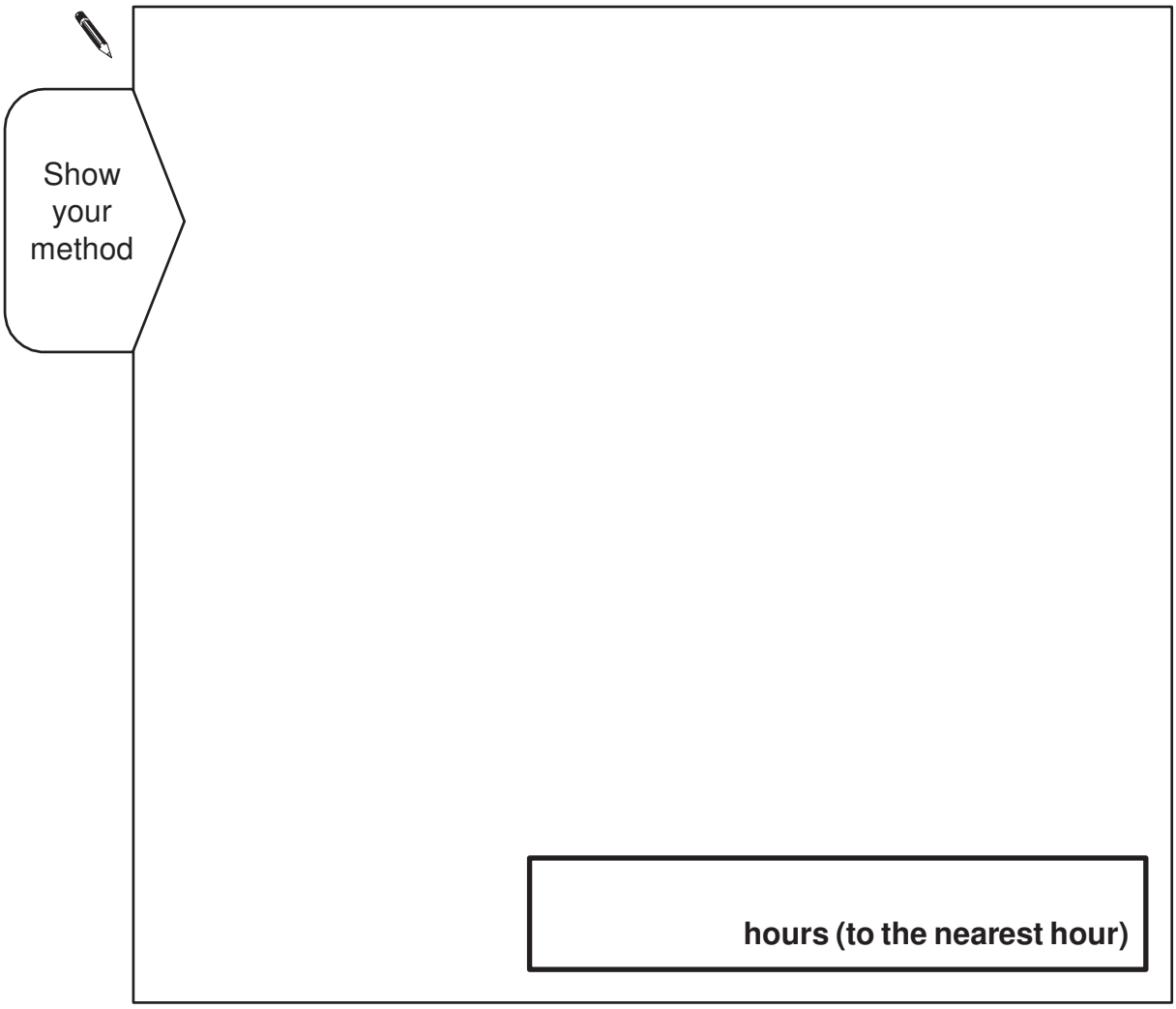


The question is on the next page.

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** × **(radius)^2**



(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.

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