Pack A

Practice National Curriculum Test

Key stage 2

Mathematics

Paper 3: reasoning

First name						
Middle name						
Last name						
Date of birth	Day		Month		Year	

School name	

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Please do not write on this page.

Instructions

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

Questions and answers

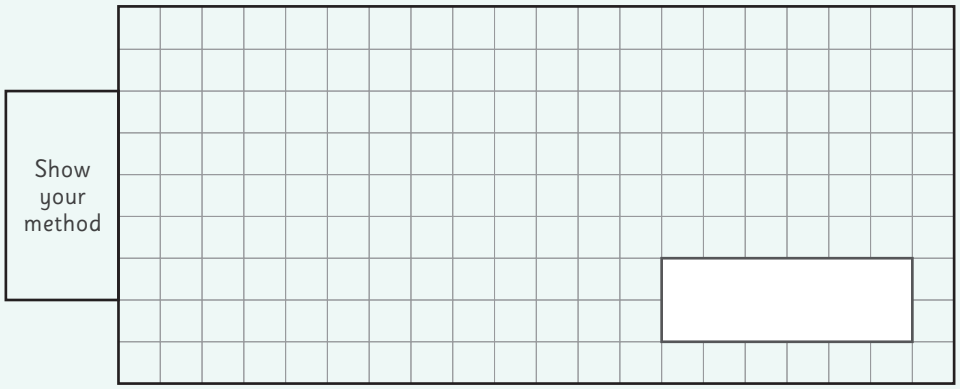
You have **40 minutes** to complete this test.

Follow the instructions for each question.

Work as quickly and as carefully as you can.

If you need to do working out, you can use the space around the question.

Some questions have a method box like this:



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

If you cannot do a question, **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.**

Marks

The number under each box at the side of the page tells you the number of marks available for each question.

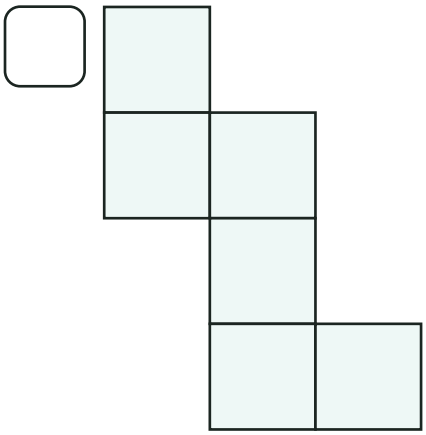
1 Circle the number that is **closest to 200.**

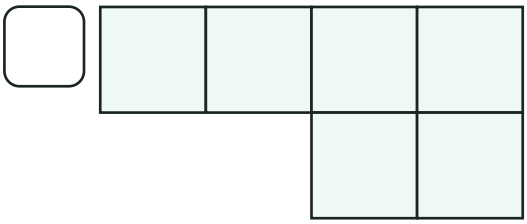
250 **150** **202** **199** **190**

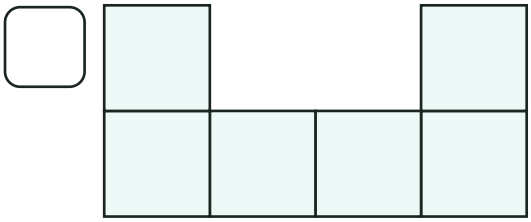
1 mark

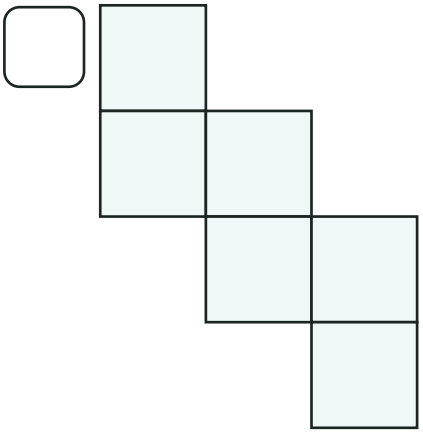
2 Here are four nets.

Tick each shape that is a net of a cube.









1 mark

3 One box can hold 14 books.

How many boxes are needed to hold 784 books?

1 mark

4 In each box, circle the number that is **greater**.

0.2	$\frac{1}{4}$
$\frac{2}{5}$	0.2
$\frac{3}{5}$	0.7
0.55	$\frac{1}{2}$
0.1	$\frac{1}{5}$

2 marks

5 Write the two missing digits to make this **long multiplication** correct.

		2	□	8	2
x				□	8
	1	9	8	5	6
	7	4	4	6	0
	9	4	3	1	6

□

2 marks

6 This table shows the approximate heights different species of birds can fly to.

Bird	Height in m
Bar Tailed Godwit	5,987
Bearded Vulture	7,257
Whooper Swan	8,254

The Common Crane can fly twice as high as the Bar Tailed Godwit.

How high can it fly in **metres**?

m

1 mark

What is the **difference** in the approximate heights that a Bearded Vulture and a Whooper Swan can fly to in **metres**?

m

1 mark

7 A rectangular field is 12 metres long by 7 metres wide.

Amy runs **5 lengths**.

Ben runs **9 widths**.

How much further does Ben run in **metres**?

Show your method

m

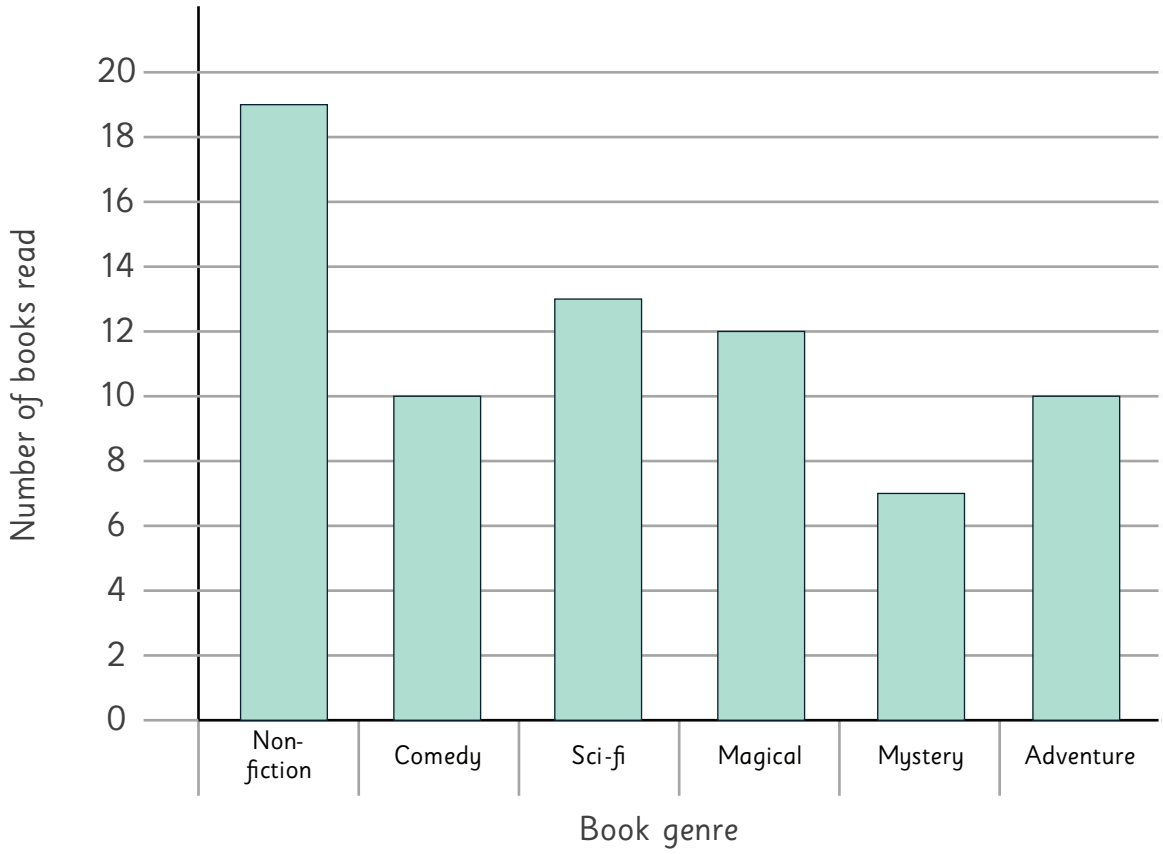
2 marks

8 Write the two missing values to make these equivalent fractions correct.

$$\frac{\square}{15} = \frac{3}{5} = \frac{6}{\square}$$

1 mark

9 This graph shows the number of books of each book genre that a class read in one month.



How many more non-fiction books were read than magical books?

1 mark

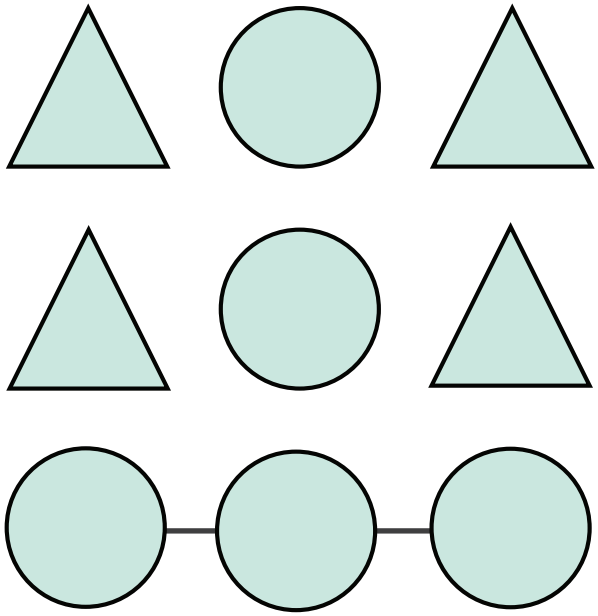
The class read 10 more books.

Half the books were mystery books and the other half were comedy books.

Add this information to the graph above.

1 mark

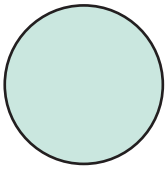
10 Each shape stands for a number.

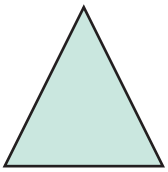


The total of the shapes on the horizontal line is 75.

The total of all the shapes is 261.

Work out the value of each shape.

 = ☐ **1 mark**

 = ☐ **1 mark**

11 Here are the ingredients for a smoothie.

Smoothie

300g of raspberries

2 handfuls of kale

3 bananas

500ml of apple juice

Nadia is making a smoothie.

She has 450g of raspberries.

How many handfuls of kale should she use?

1 mark

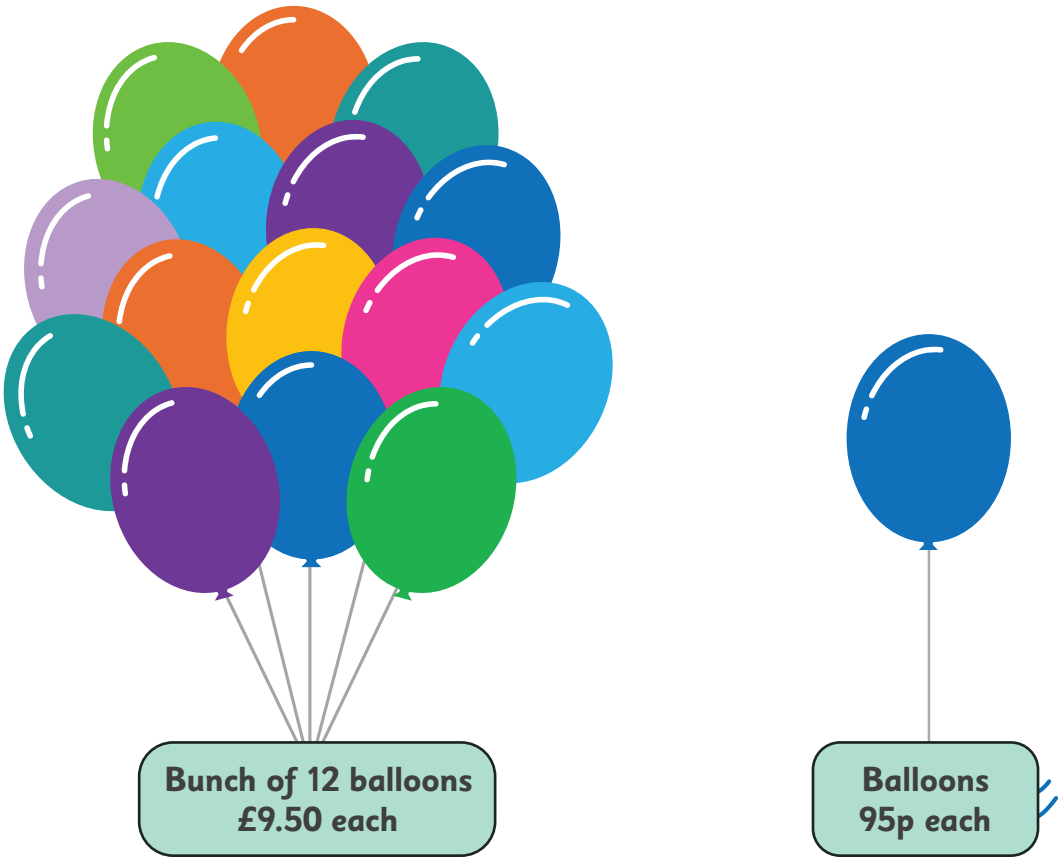
12 The numbers in this sequence increase by the same amount each time.

Write the missing numbers.

78 **130**

2 marks

13 James and Nadia buy some balloons.



James buys a bunch of 12 balloons for £9.50

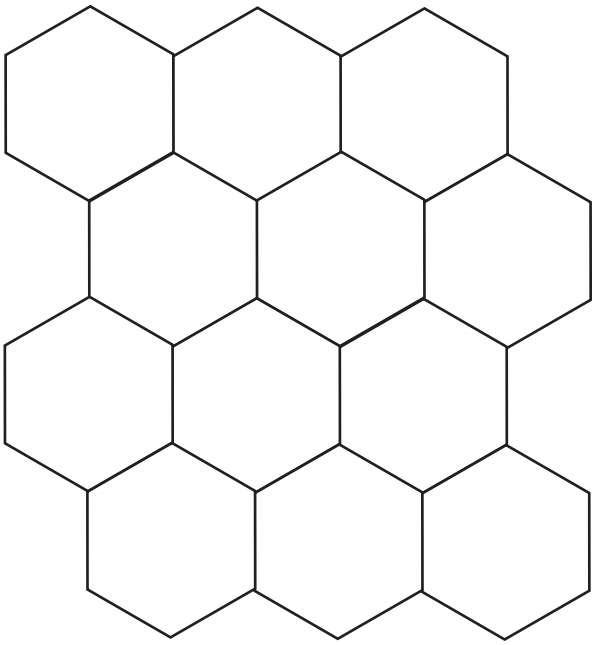
Nadia buys 12 balloons for 95p each.

How much **more** does Nadia pay than James?

Show your method

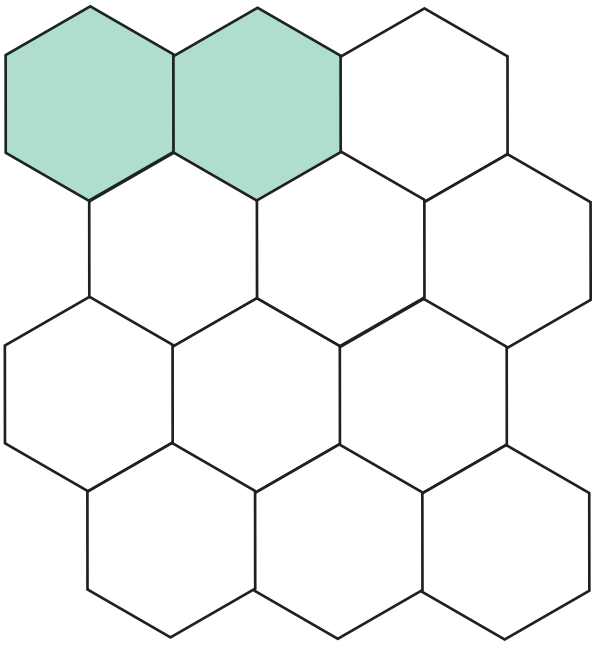
2 marks

14 Shade $\frac{1}{6}$ of this shape.



1 mark

Shade more sections of this shape so that $\frac{1}{2}$ is shaded.



1 mark

15 Nadia says,

"If I know 20% of a number, I can work out the original number."

Do you agree with Nadia? Circle Yes or No.

Yes **No**

Explain your answer.

1 mark

16 To estimate the age of a tree in years, we can follow this formula:

- measure the circumference of the tree's trunk
- divide it by 3

What is the **difference** in the estimated ages of these two trees?

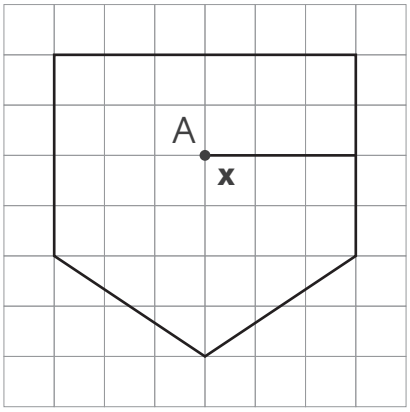
Show your method

years

2 marks

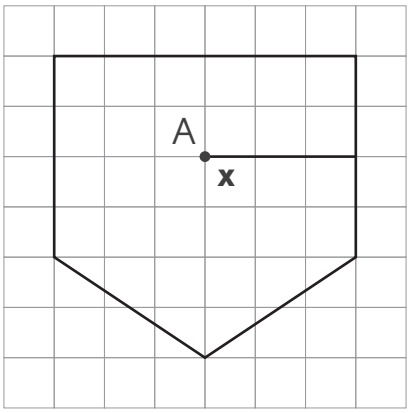
17 This diagram shows a shape on a square grid with an unfinished angle **x**.

Join point A to one other point to make angle **x acute**.



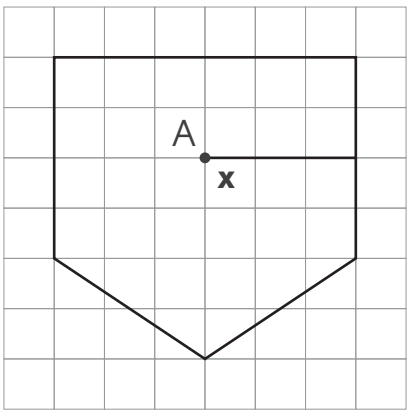
1 mark

Join point A to one other point to make angle **x obtuse**.



1 mark

Join point A to one other point to make angle **x a right angle**.



1 mark

18 The price of a house is reduced by 25%.

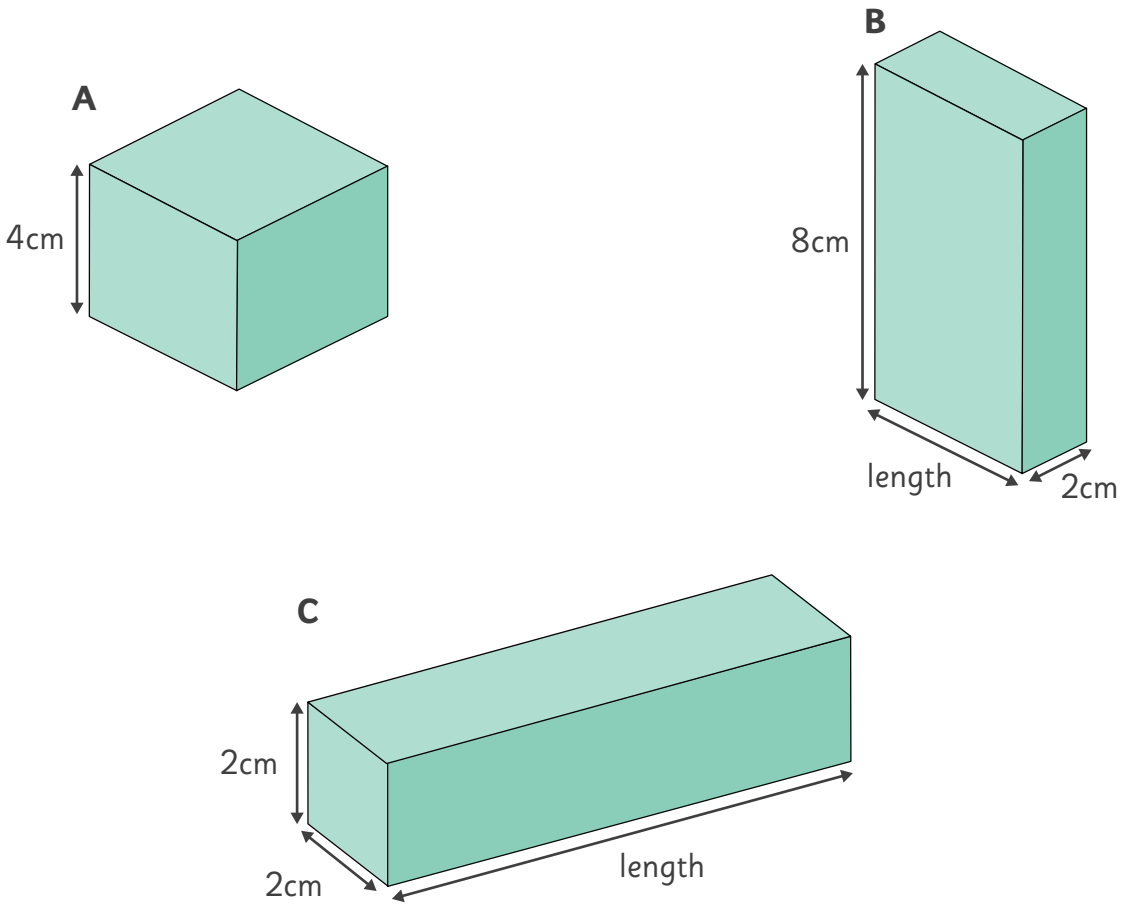
Its reduced price is £304,536.

What was the pre-sale price of the house?

Show your method

2 marks

19 A cube (A) and two cuboids (B & C) all have the **same volume**.



Calculate the length of cuboid **B**.

cm

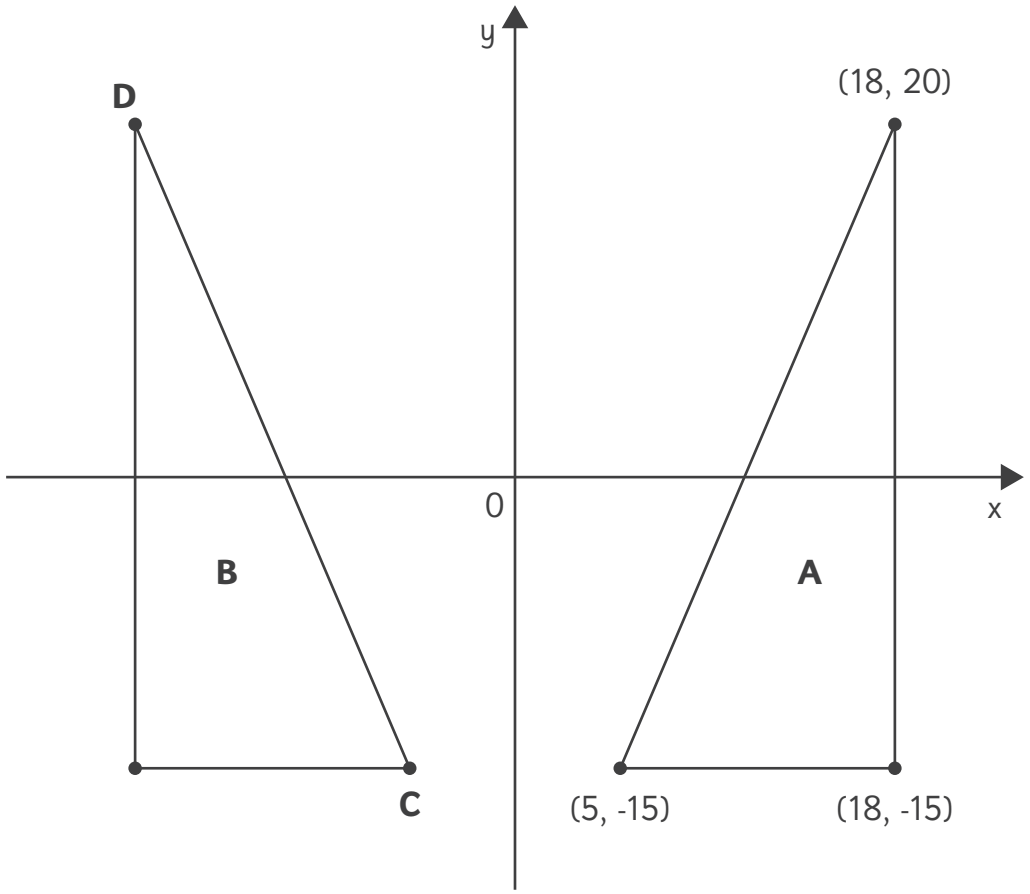
1 mark

Calculate the length of cuboid **C**.

cm

1 mark

20 Shape A has been drawn on a coordinate axes.



Shape B is a reflection of shape A in the y-axis.

What are the coordinates of point C and D?

C = (,) ☐ **1 mark**

D = (,) ☐ **1 mark**