

Pack B

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:

Show your method

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

Ben is making a sequence, starting with 300.

He subtracts 95 each time.

Write the missing numbers in the boxes.

300

205

110

1 mark

2

Order the numbers starting with the **largest**.
Match each number with its order.

1,023,201

1st

largest

1,203,001

2nd

1,023,021

3rd

1,203,012

4th

smallest

1 mark



3

Round **218.45**

to one decimal place

to the nearest whole number

to the nearest 10

2 marks

4

Write the number that is **100 times greater** than four hundred and eighteen.

1 mark



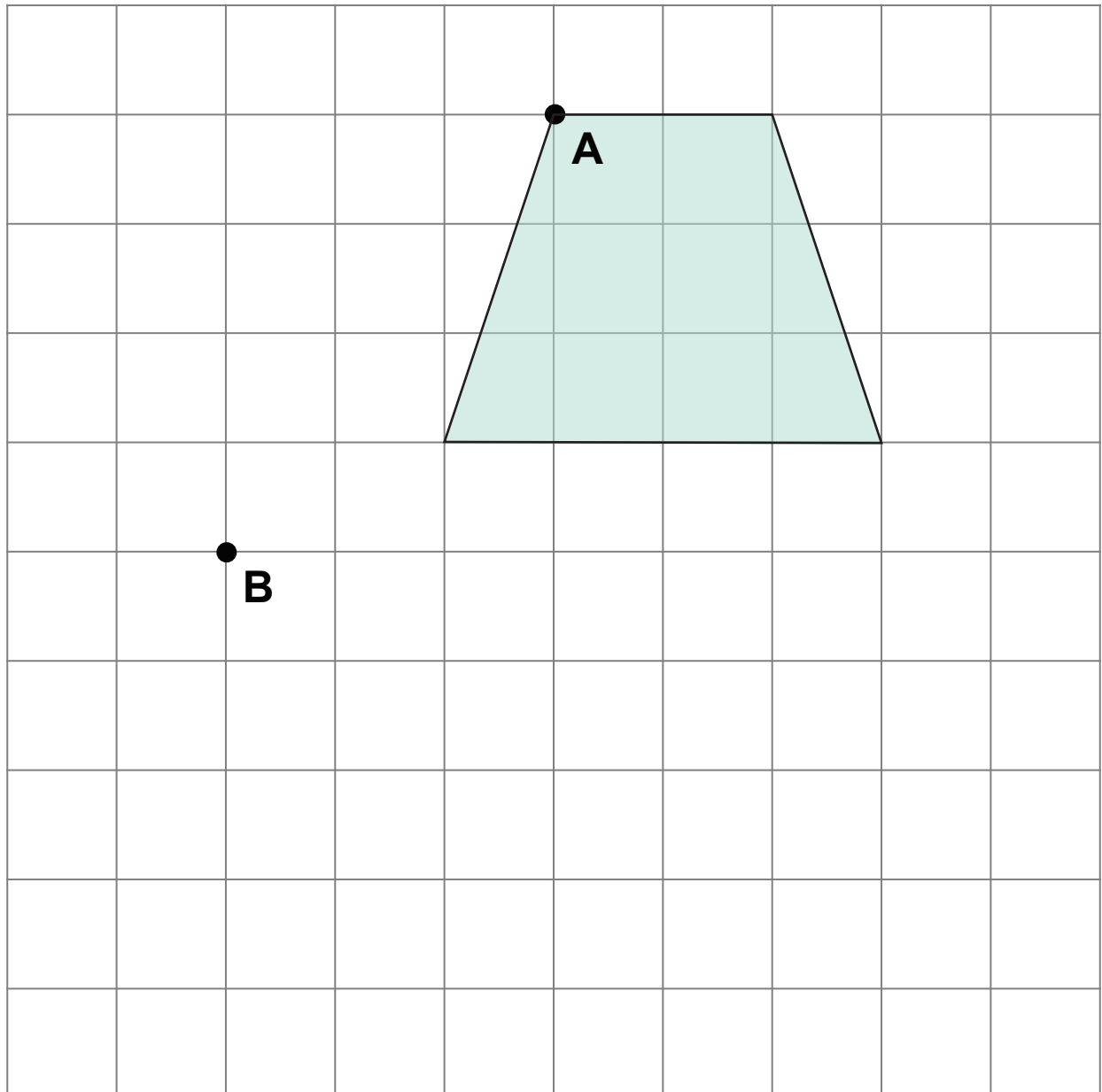
5

Here is a shape on a grid.

The shape is translated so that point A moves to point B.

Draw the shape in its new position.

Use a ruler.



1 mark

6

Match each fraction to its equivalent simplified fraction.

 $\frac{15}{25}$
 $\frac{1}{2}$
 $\frac{6}{20}$
 $\frac{3}{5}$
 $\frac{9}{12}$
 $\frac{3}{10}$
 $\frac{12}{24}$
 $\frac{3}{8}$
 $\frac{6}{16}$
 $\frac{3}{4}$
☐

1 mark

7

Write the missing number to make this addition correct.

$$200,000 + \boxed{} + 60 = 270,060$$

☐

1 mark



8 Three different single-digit numbers multiply to make 105.

Find the missing numbers.

$$\boxed{} \times \boxed{} \times \boxed{} = \boxed{105}$$

☐

1 mark

9 Find a **square** number and a **cube** number that have a sum of 100.

$$\begin{array}{ccc} \boxed{} & + & \boxed{} \\ \text{square number} & & \text{cube number} \end{array} = \boxed{100}$$

☐

1 mark

10

James is looking at the numbers below.

211

198

204

187

Which number is **closest** to 200?

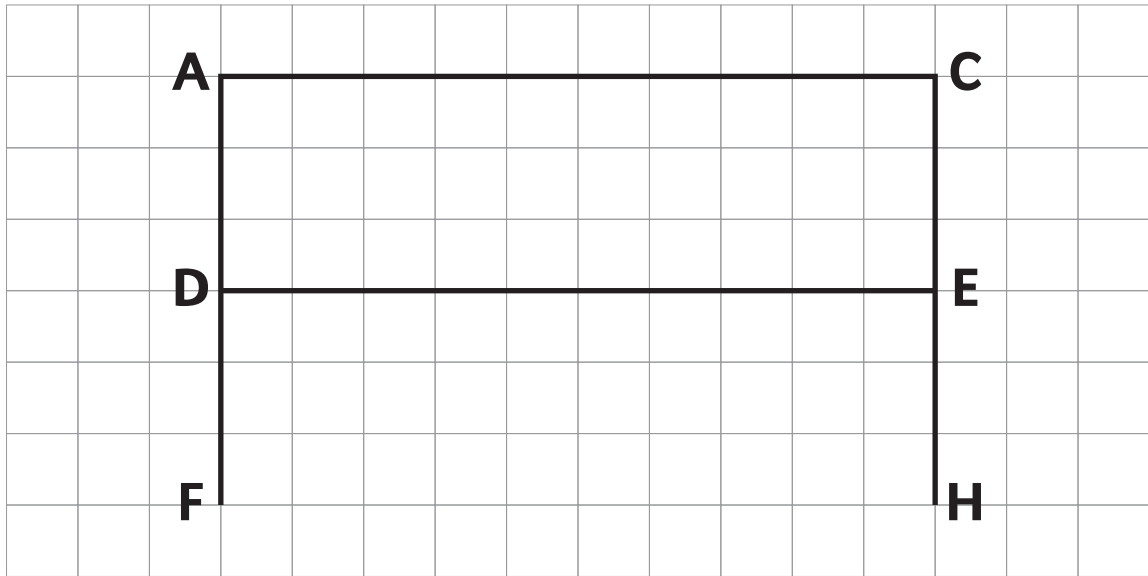
☐

1 mark

Which number is **furthest** from 200?

☐

1 mark



Tick **all** the correct statements.

AC is parallel to DE

☐

DE is parallel to AF

☐

AF is perpendicular to CH

☐

CH is perpendicular to DE

☐☐

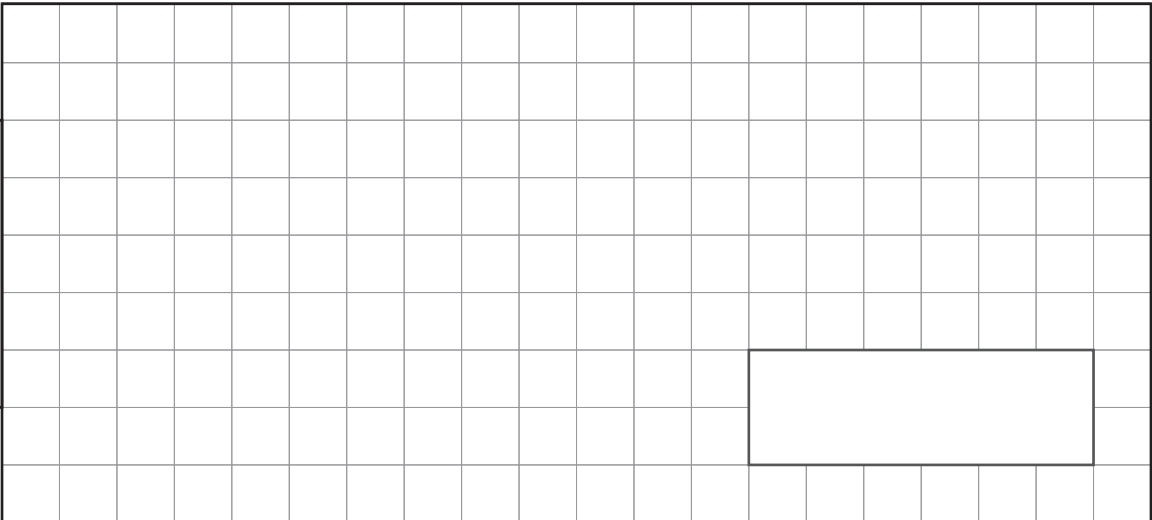
1 mark

12 Shen buys 4 large trays of cupcakes and 6 small trays of cupcakes.

Each large tray has 22 cupcakes and each small tray has 12 cupcakes.

How many **cupcakes** does Shen buy?

Show your method



☐ 2 marks

13 Fill in the missing numbers.

$$\boxed{} - \boxed{211} = \boxed{87}$$

☐ 1 mark

$$\boxed{22} \times \boxed{} = \boxed{352}$$

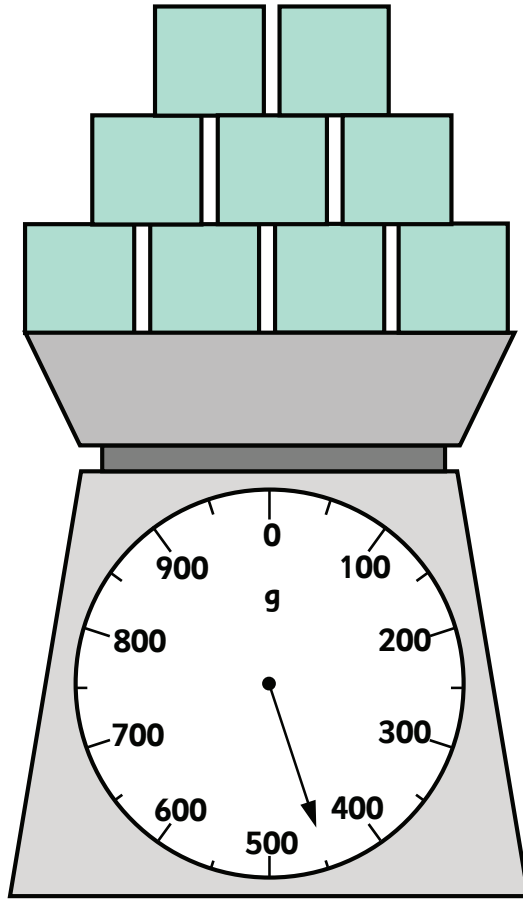
☐ 1 mark

14

Sarah has built a tower out of blocks.

Each block has the same mass.

She places her tower on the scales.



She removes one block.

What does the scale read now?

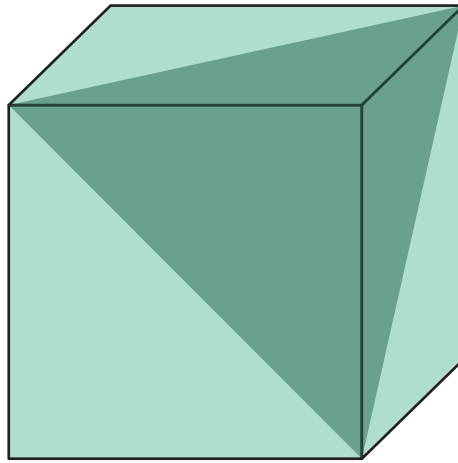
Show
your
method

2 marks

15

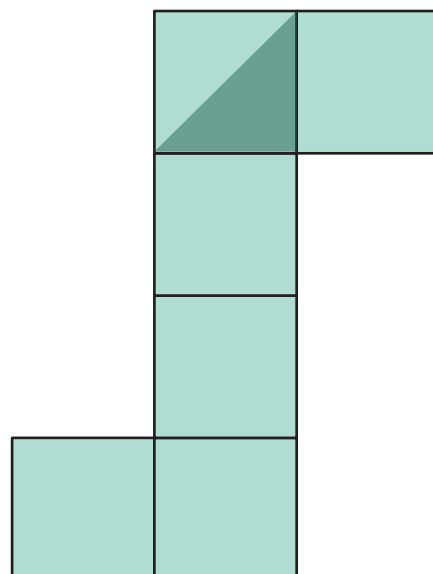
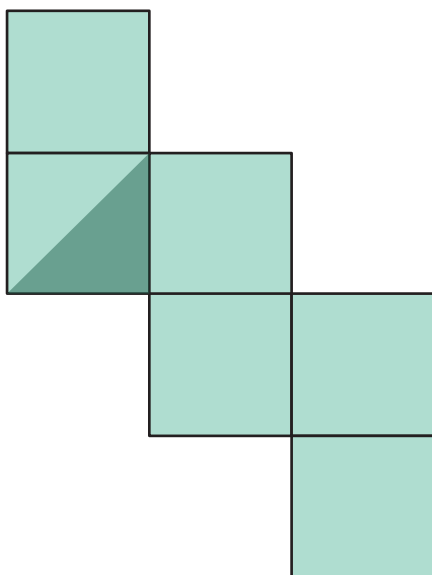
Here is a cube.

Three faces of a cube are shaded diagonally, with half of each face shaded.



Below are two nets of the cube. Part of each net has been shaded.

Complete the missing shading.



1 mark

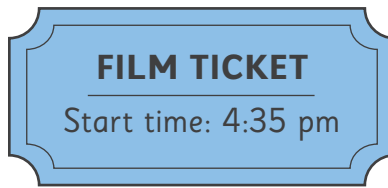


1 mark



16

Abdul is going to see a film.



It takes Abdul 42 minutes to get from his house to the cinema.

He needs to arrive 10 minutes before the film starts.

What is the latest time Abdul can leave his house?

pm

☐

1 mark

When the film finishes, Abdul's watch shows this time:



How long was the film in hours and minutes?

hours

minutes

☐

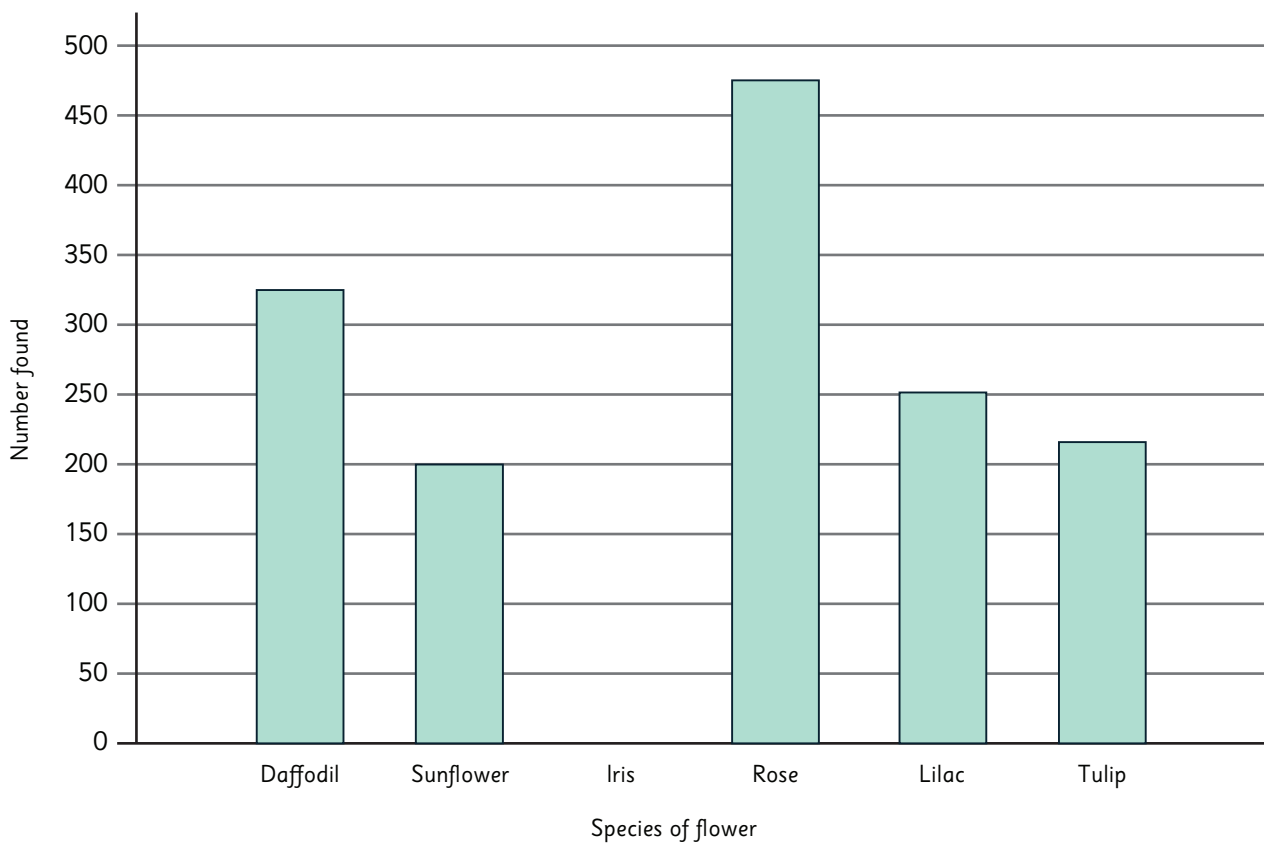
1 mark



This table shows the number of different flower species found in a country garden.

Species of flower	Number found
Daffodil	325
Sunflower	200
Iris	425
Rose	475
Lilac	250
Tulip	210

Use the table to complete the graph.



1 mark



18

24 children in Year 6 were gifted books.

Inaya says,

“40% of the children were given a comedy book.”

Can Inaya be correct? Circle Yes or No.

Yes

No

Explain your answer.

☐

1 mark



Use the digit cards below to complete the calculation.

4

7

3

5

$$\square \times \square - \square = \square$$



1 mark

20

This table shows the favourite zoo animals of children in Year 6.

Animal	No. of children
Lion	20
Giraffe	15
Elephant	10
Gorilla	5

Tick the statements that are correct.

20% of children like elephants best.

☐

$\frac{2}{5}$ of children like gorillas best.

☐

As a decimal, the proportion of children who prefer lions is 0.4.

☐

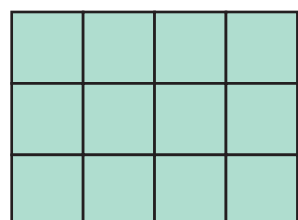
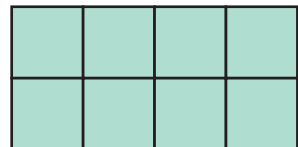
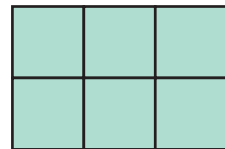
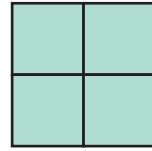
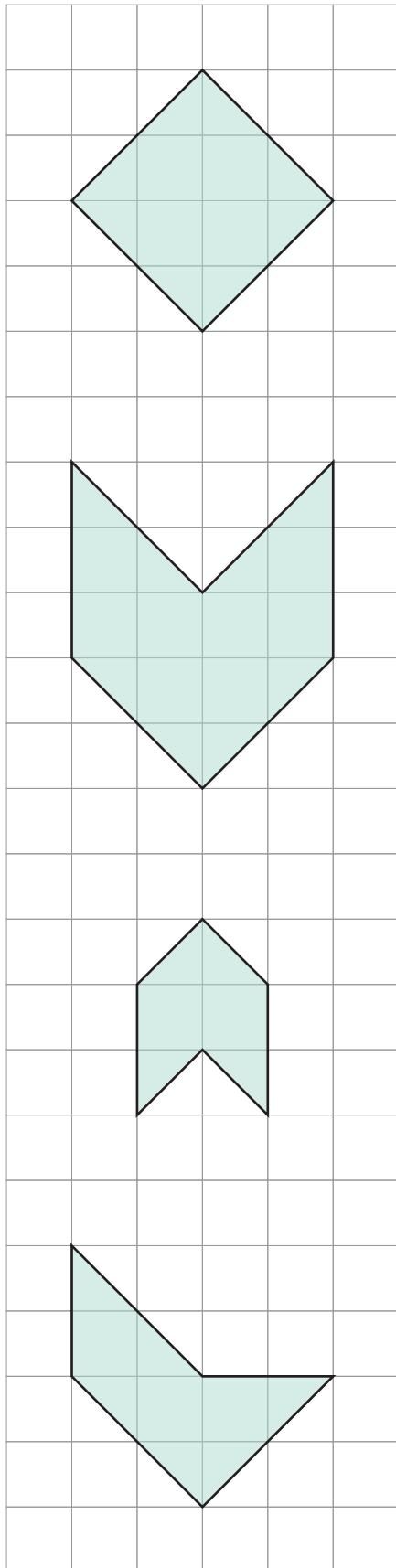
15% of children like giraffes best.

☐☐

2 marks



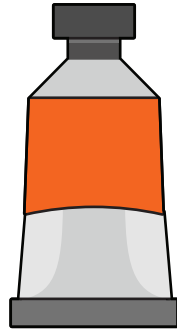
Match each shape to the one with **equal area**.



1 mark

22

James is given some pocket money.



Tube of paint
£1.30



Paintbrush
90p

He buys three tubes of paint and two paintbrushes.

He has **one-quarter** of his money left.

How much pocket money was he given?

Show
your
method

£



2 marks



When $x = 8$, what is the value of each expression below?

$x + 23$

 $=$

$x - 5$

 $=$

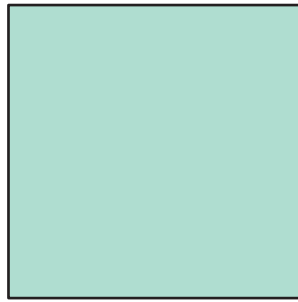
$3x$

 $=$ 

2 marks

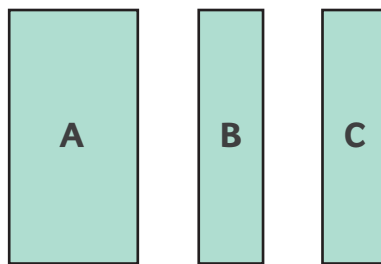
24

The area of a square is 36 cm^2 .

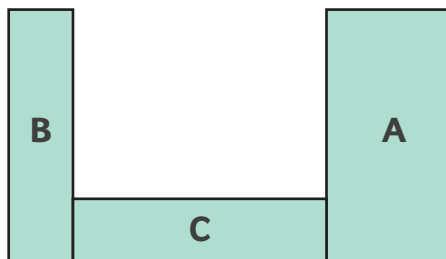


The square is cut into 3 rectangles.

Rectangle **B** and **C** have an area **half** the size of rectangle **A**.

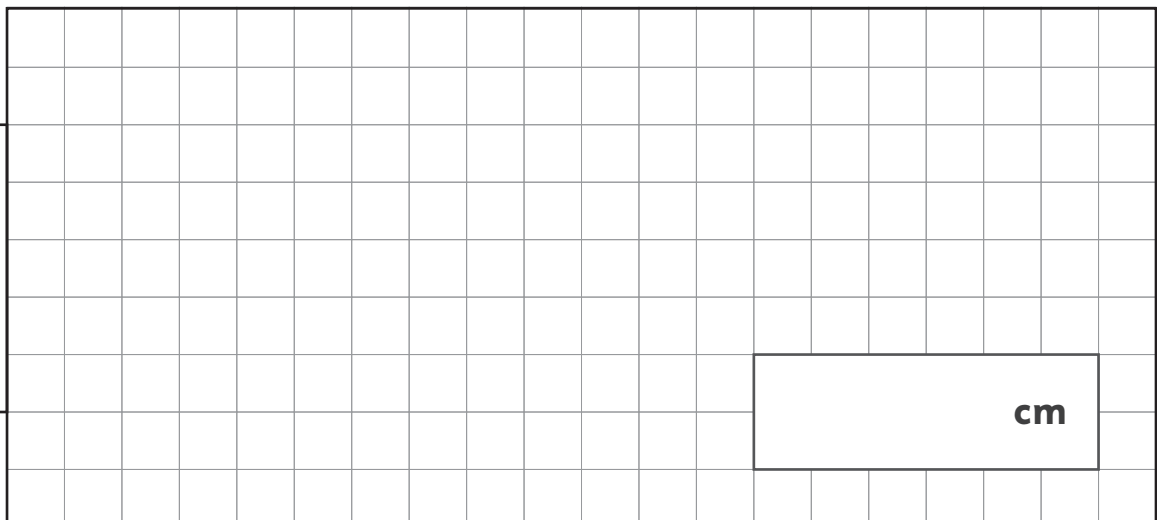


Rectangles **A**, **B** and **C** are used to make a new shape.



Calculate the **perimeter** of the shape.

Show
your
method



2 marks

