

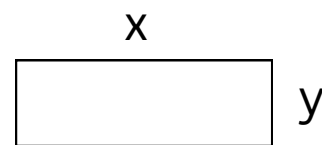
GCSE & High School Topic Questions

PERIMETER: Combining congruent rectangles

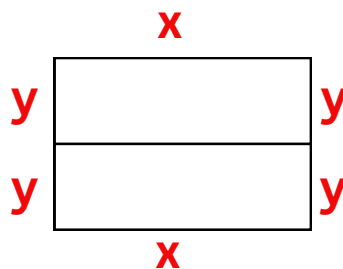
Example 1

The following shapes are made by putting together two or more identical copies of the rectangle shown.

Work out the perimeter of each.

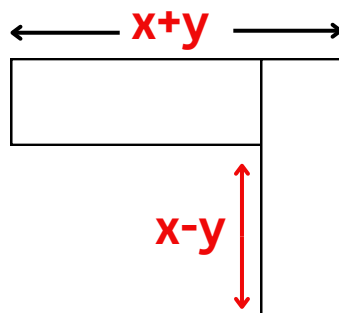
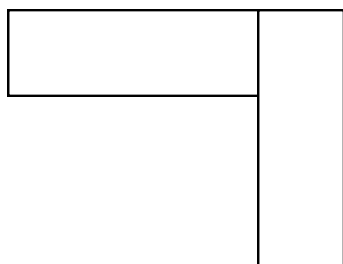


(a)



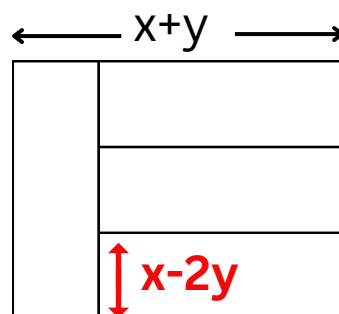
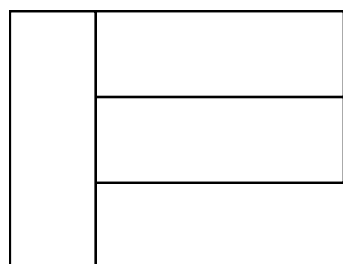
$$P = 2x + 4y$$

(b)



$$P = 4x + 2y$$

(c)



$$P = 4x + 2y$$

GCSE & High School Topic Questions

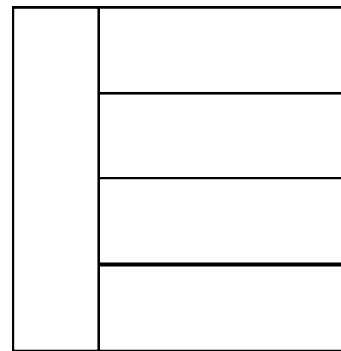
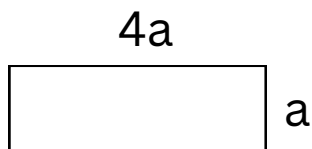
PERIMETER: Combining congruent rectangles

Example 2

Five identical small rectangles are put together to form a large rectangle as shown.

The large rectangle has a perimeter of 36.

Work out the perimeter of each small rectangle.



small rectangles:
length = 4 x width

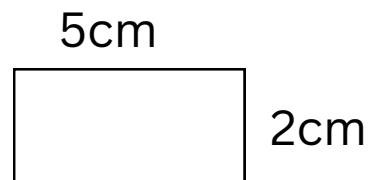
Large rectangles:
Perimeter = $18a$
 $18a = 36$
 $a = 2$

small rectangle:
Perimeter = $10a$
Perimeter = 20

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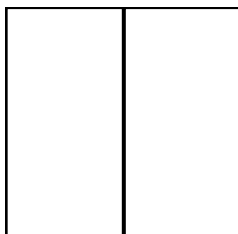
PERIMETER: Combining congruent rectangles

Q1 Each of the following shapes are made by putting together two or more identical copies of the rectangle to the right .



Work out the perimeter of each shape.

(a)



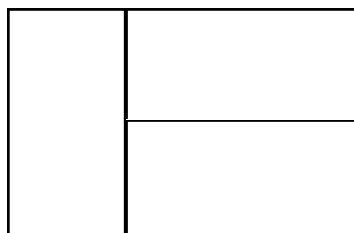
(2 marks)

(b)



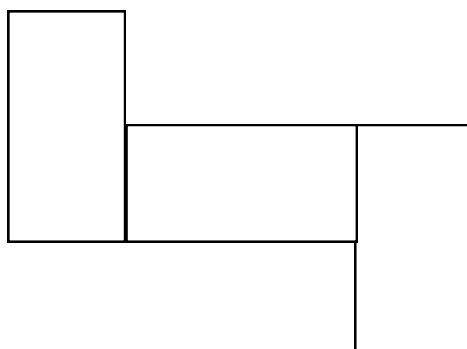
(2 marks)

(c)



(2 marks)

(d)

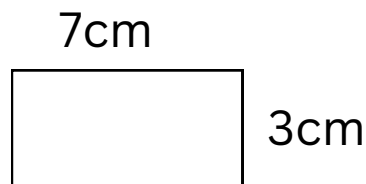


(2 marks)

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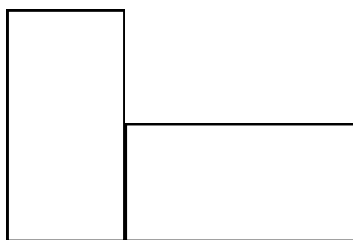
PERIMETER: Combining congruent rectangles

Q2 Each of the following shapes are made by putting together two or more identical copies of the rectangle to the right .



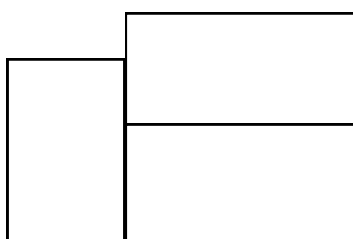
Work out the perimeter of each shape.

(a)



(2 marks)

(b)



(2 marks)

(c)

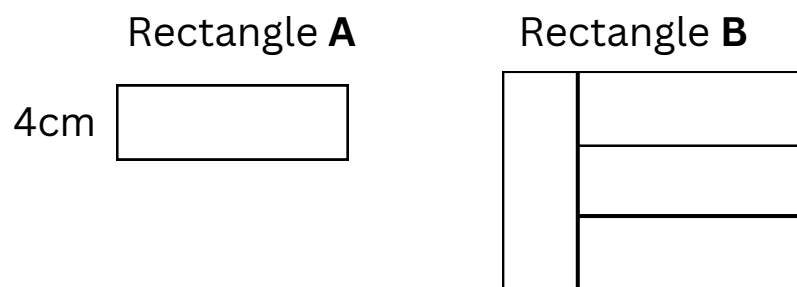


(2 marks)

GCSE & High School Topic Questions

PERIMETER: Combining congruent rectangles

- Q3 Rectangle **A** has a width of 4cm.
Four identical copies of rectangle **A** are arranged to make rectangle **B**, as shown in the diagram.



- Work out the length of the longer side of rectangle **A**.
- Work out the perimeter of rectangle **A**.
- Work out the perimeter of rectangle **B**.

(3 marks)

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PERIMETER: Combining congruent rectangles

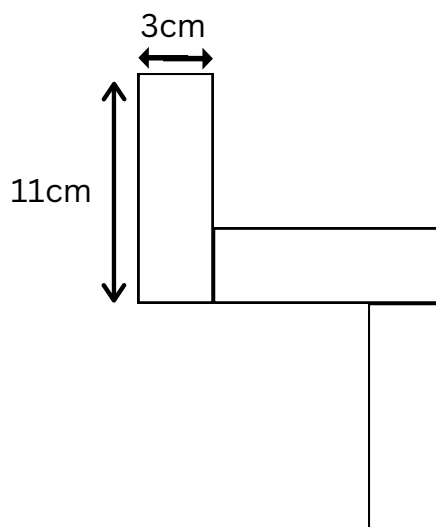
- Q4 A large rectangle is made by joining three identical small rectangles, as shown.



The large rectangle has a perimeter of 30cm.
Work out the length and width of each smaller rectangle.

(2 marks)

- Q5 The shape below is made up of joining three identical small rectangles, as shown.
Work out the perimeter of the shape.

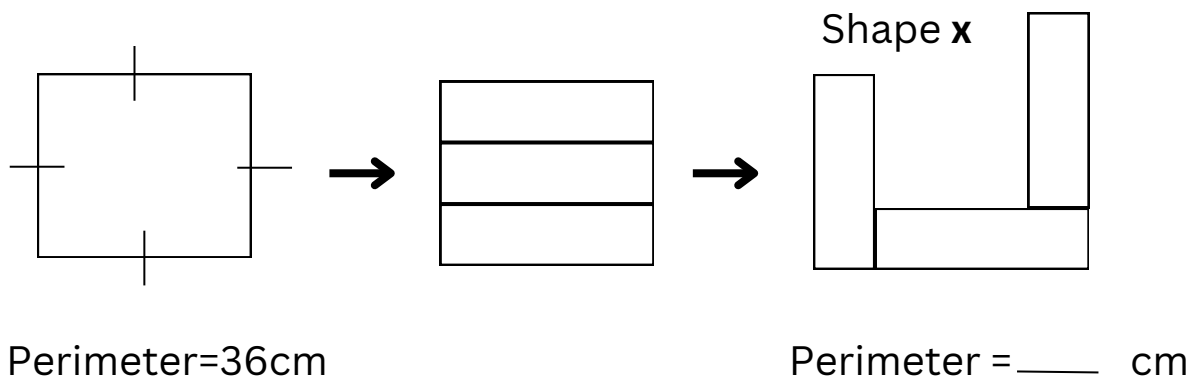


(2 marks)

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PERIMETER: Combining congruent rectangles

- Q6 A square with perimeter 36cm is split into three identical small rectangles, which are then arranged to make the shape **X** in the diagram. Work out the perimeter of the shape.



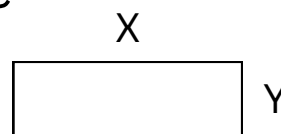
(2 marks)

GCSE & High School Topic Questions

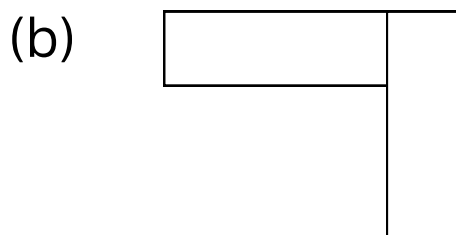
PERIMETER: Combining congruent rectangles

Q7 Each of the following shapes are made by putting together two or more identical copies of the rectangle to the right.

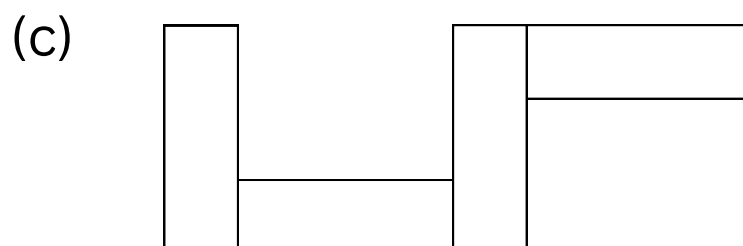
Work out a simplified expression for the perimeter of each shape



(2 marks)



(2 marks)

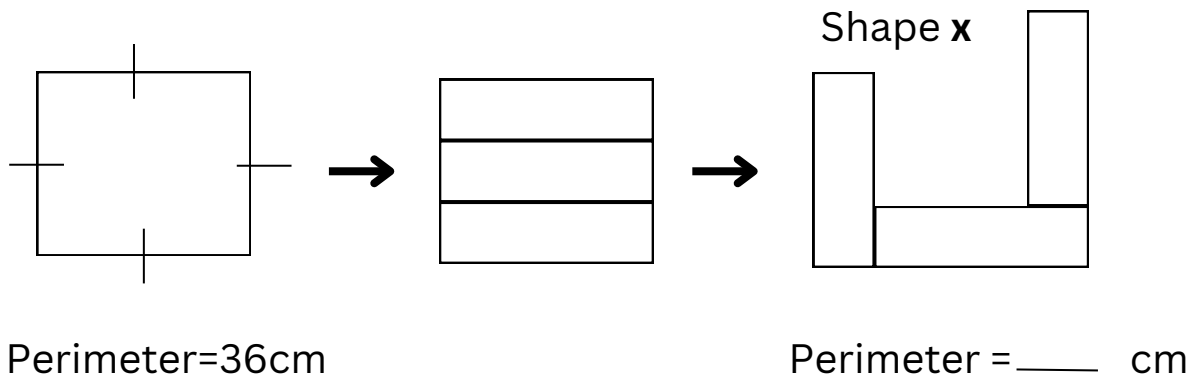


(2 marks)

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PERIMETER: Combining congruent rectangles

- Q8 A square with perimeter 60 cm is split into three identical small rectangles, which are then arranged to make the shape **X** in the diagram. Work out the perimeter of the shape.



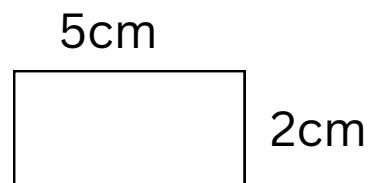
(2 marks)

GCSE & High School Topic Questions

PERIMETER: Combining congruent rectangles

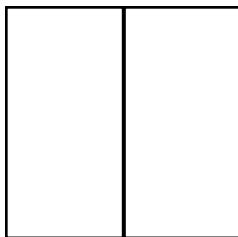
answers

Q1 Each of the following shapes are made by putting together two or more identical copies of the rectangle to the right .



Work out the perimeter of each shape.

(a)



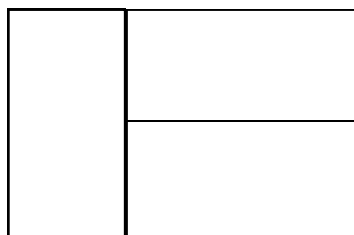
$$P = 18 \text{ cm}$$

(b)



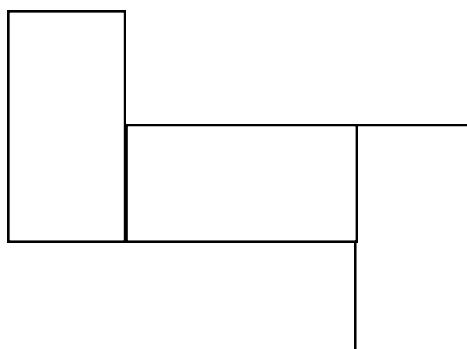
$$P = 24 \text{ cm}$$

(c)



$$P = 23 \text{ cm}$$

(d)



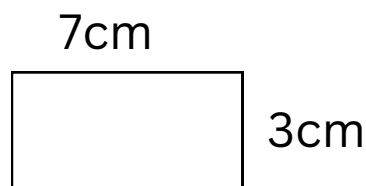
$$P = 34 \text{ cm}$$

GCSE & High School Topic Questions

PERIMETER: Combining congruent rectangles

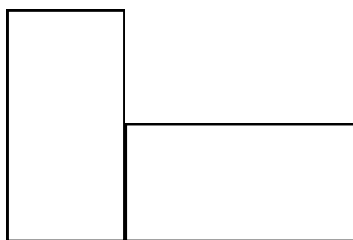
answers

Q2 Each of the following shapes are made by putting together two or more identical copies of the rectangle to the right .



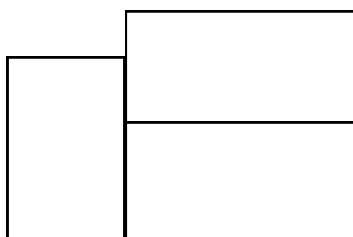
Work out the perimeter of each shape.

(a)



$$P = 34 \text{ cm}$$

(b)



$$P = 32 \text{ cm}$$

(c)



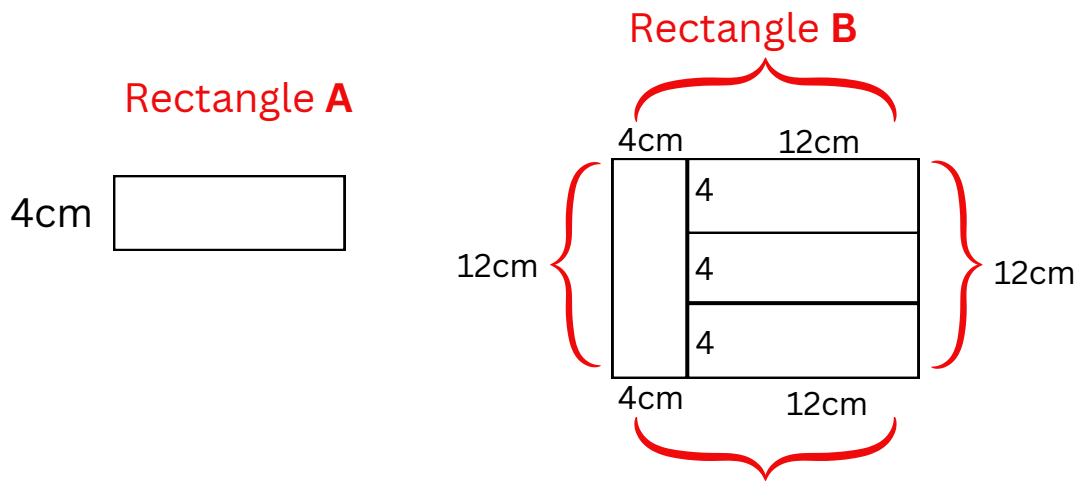
$$P = 48 \text{ cm}$$

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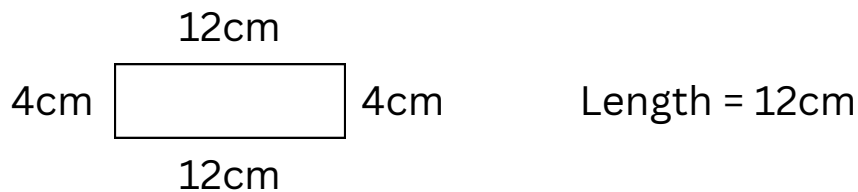
PERIMETER: Combining congruent rectangles

answers

- Q3 Rectangle **A** has a width of 4cm.
Four identical copies of rectangle **A** are arranged to make rectangle **B**, as shown in the diagram.



- (a) Work out the length of the longer side of rectangle **A**.



- (b) Work out the perimeter of rectangle **A**.

Perimeter of rectangle **A** = **32 cm**

- (c) Work out the perimeter of rectangle **B**.

Perimeter of rectangle **B** = **56 cm**

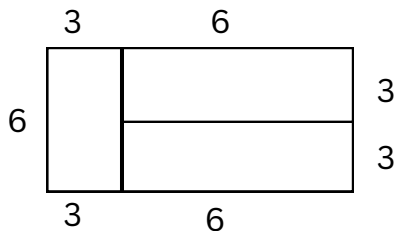
GCSE & High School Topic Questions

PERIMETER: Combining congruent rectangles

answers

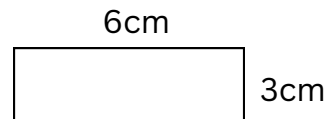
Q4 A large rectangle is made by joining three identical small rectangles, as shown.

The large rectangle has a perimeter of 30cm.
Work out the length and width of each smaller rectangle.



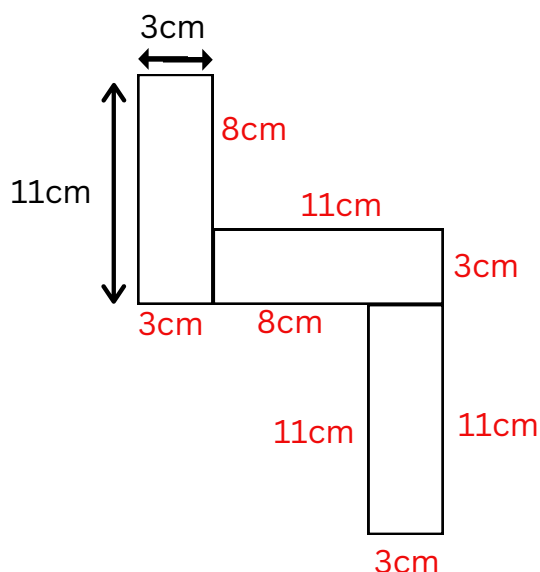
$$\text{Perimeter} = 6 + 6 + 9 + 9$$

$$\text{Perimeter} = 30\text{cm}$$



Q5 The shape below is made up of joining three identical small rectangles, as shown.

Work out the perimeter of the shape.



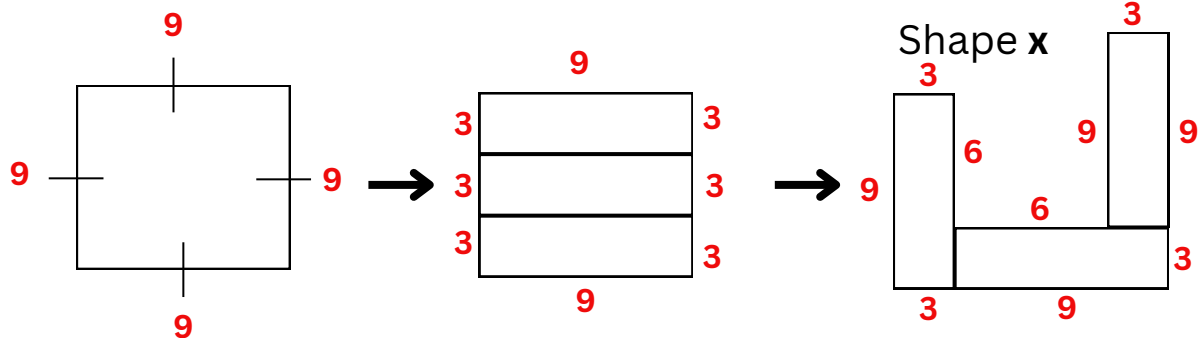
$$\text{Perimeter} = 72\text{cm}$$

GCSE & High School Topic Questions

PERIMETER: Combining congruent rectangles

answers

- Q6 A square with perimeter 36cm is split into three identical small rectangles, which are then arranged to make the shape **X** in the diagram. Work out the perimeter of the shape.



Perimeter=36cm

Each rectangle is
9cm by 3cm

Perimeter of shape
x = 60cm



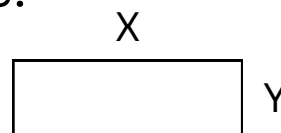
GCSE & High School Topic Questions

PERIMETER: Combining congruent rectangles

answers

Q7 Each of the following shapes are made by putting together two or more identical copies of the rectangle to the right.

Work out a simplified expression for the perimeter of each shape.



(a) Perimeter = $4x+4y$

(b) Perimeter = $4x+2y$

(c) Perimeter = $8x+2y$

GCSE & High School Topic Questions

PERIMETER: Combining congruent rectangles

answers

- Q8 A square with perimeter 60 cm is split into three identical small rectangles, which are then arranged to make the shape **X** in the diagram. Work out the perimeter of the shape.

