

Lesson 3 – Measurement: Perimeter and Area - Calculate Perimeter

NC Objective:
Measure and calculate the perimeter of composite rectilinear shapes in cm and m

Resources needed:
Differentiated Sheets
Teaching Slides

Vocabulary:
Measure, side lengths, perimeter, unknown, total, strategy

Children apply their knowledge of measuring and finding perimeter to find the unknown side lengths. They find the perimeter of shapes with and without grids. When calculating perimeter of shapes, encourage children to mark off the sides as they add them up to prevent repetition of counting/omission of sides.

Key Questions:

What can you tell me about the sides of a square/rectangle? How does this help you work out this question? How can you use the labelled sides to find the length of the unknown sides? What strategies can you use to calculate the total perimeter? What does regular mean? Why are rectangles irregular?

★ Working Towards

★★ Working Within

★★★ Greater Depth

Calculate perimeter

Calculate the perimeter of the shapes below.

Each square has a length of 2cm. What is the perimeter of the whole shape? Perimeter = _____

Each square has a length of 5cm. What is the perimeter of the whole shape? Perimeter = _____

Each square has a length of 3cm. What is the perimeter of the whole shape? Perimeter = _____

Find the perimeter of the following shapes:

Perimeter = _____

Perimeter = _____

Perimeter = _____

Calculate perimeter

Calculate the perimeter of the shapes below.

Each square has a length of 3cm. What is the perimeter of the whole shape? Perimeter = _____

Each square has a length of 7m. What is the perimeter of the whole shape? Perimeter = _____

Each square has a length of 13m. What is the perimeter of the whole shape? Perimeter = _____

Find the perimeter of the following shapes:

Perimeter = _____

Perimeter = _____

Perimeter = _____

Calculate perimeter

Calculate the perimeter of the shapes below.

Each square has a length of 4.5 cm. What is the perimeter of the whole shape? Perimeter = _____

Each square has an area of 81 m². What is the perimeter of the whole shape? Perimeter = _____

Each square has an area of 49 m². What is the perimeter of the whole shape? Perimeter = _____

Find the perimeter of the following shapes:

Perimeter = _____

Perimeter = _____

Perimeter = _____

Children apply their knowledge of measurement and now calculate finding the perimeter of shapes with unknown lengths. They find a simple missing length.

Children find one missing length in whole centimetres and fractions in centimetres with shapes in different orientations.

Children apply their problem solving skills to work out the perimeter as they have been given the area of each square. They find missing lengths in more complicated shapes.

Reasoning & Problem Solving

Calculate Perimeter

Reasoning & Problem Solving

The value of a is 10 m. What is the total perimeter of the shape?

The rectangle has a perimeter of 30 cm. What is the value of b ?

Calculate Perimeter

Reasoning & Problem Solving

The value of a is 9 m. What is the total perimeter of the shape?

The rectangle has a perimeter of 56 cm. What is the value of b ?

Calculate Perimeter

Reasoning & Problem Solving

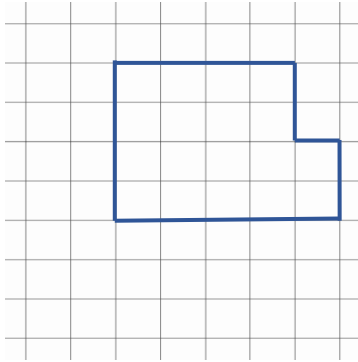
The value of a is 11 cm. What is the total perimeter of the shape?

The rectangle has a perimeter of 72 m. What is the value of b ?



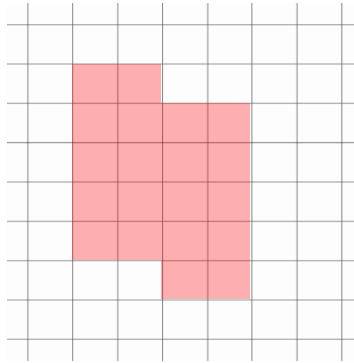
Calculate the perimeter of the shapes below.

Each square has a length of 2 cm.
What is the perimeter of the whole shape?



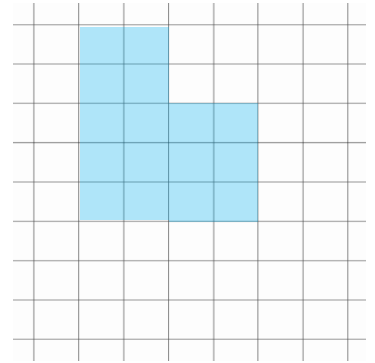
Perimeter = _____

Each square has a length of 5 cm.
What is the perimeter of the whole shape?



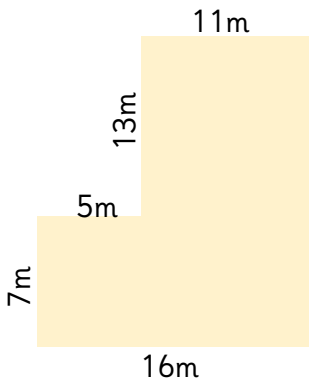
Perimeter = _____

Each square has a length of 3 cm.
What is the perimeter of the whole shape?

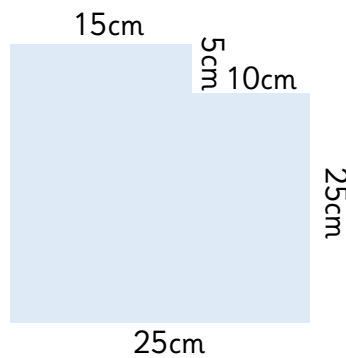


Perimeter = _____

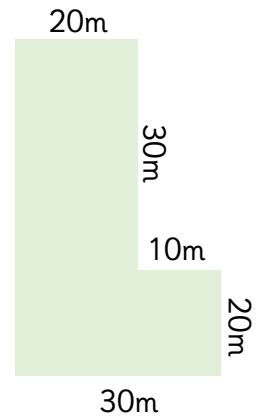
Find the perimeter of the following shapes:
(Not to scale)



Perimeter = _____



Perimeter = _____



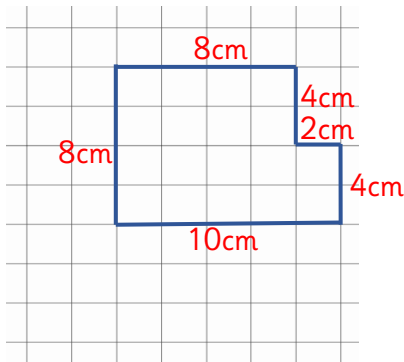
Perimeter = _____



Calculate the perimeter of the shapes below.

Each square has a length of 2 cm.

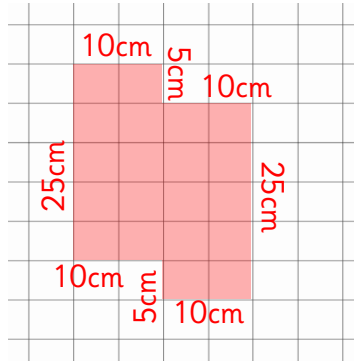
What is the perimeter of the whole shape?



Perimeter = 36 cm

Each square has a length of 5 cm.

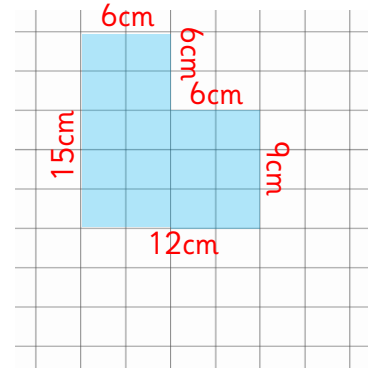
What is the perimeter of the whole shape?



Perimeter = 100 cm

Each square has a length of 3 cm.

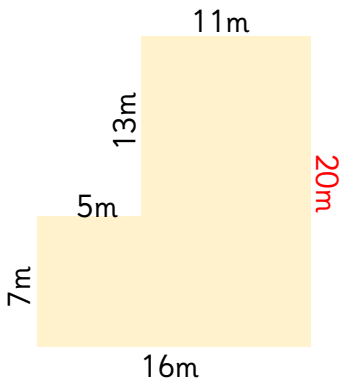
What is the perimeter of the whole shape?



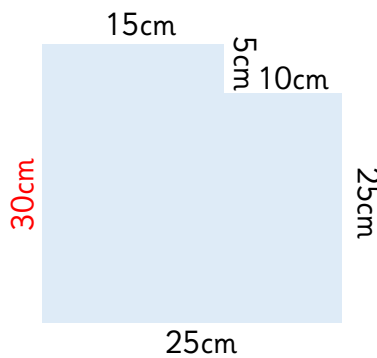
Perimeter = 54 cm

Find the perimeter of the following shapes:

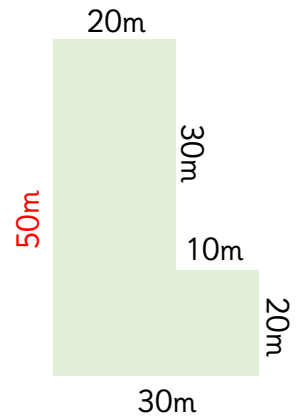
(Not to scale)



Perimeter = 72 m



Perimeter = 110 cm

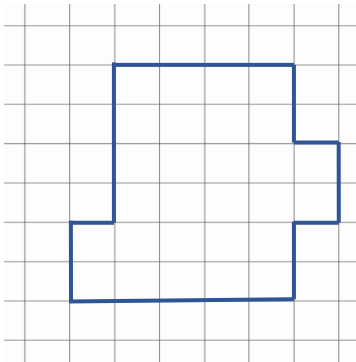


Perimeter = 160 m



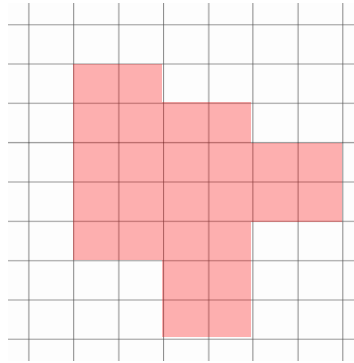
Calculate the perimeter of the shapes below.

Each square has a length of 3 cm.
What is the perimeter of the whole shape?



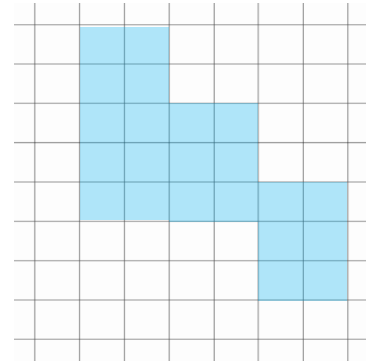
Perimeter = _____

Each square has a length of 7 m.
What is the perimeter of the whole shape?



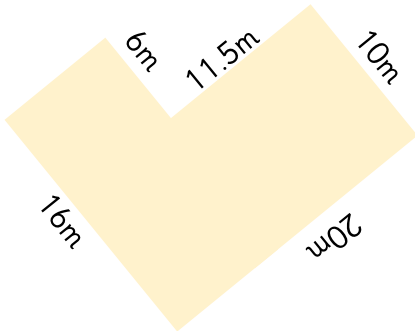
Perimeter = _____

Each square has a length of 13 m.
What is the perimeter of the whole shape?

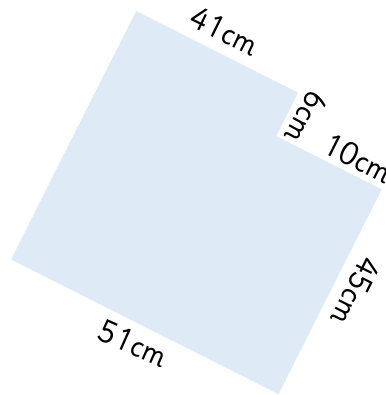


Perimeter = _____

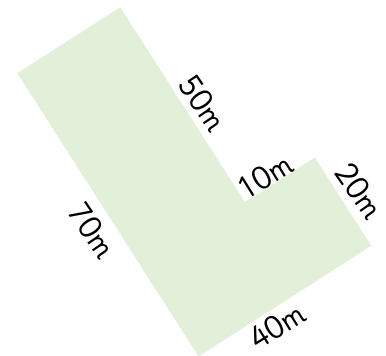
Find the perimeter of the following shapes:
(Not to scale)



Perimeter = _____



Perimeter = _____

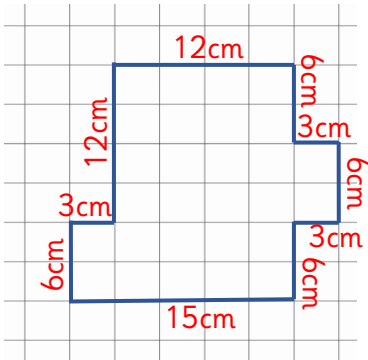


Perimeter = _____



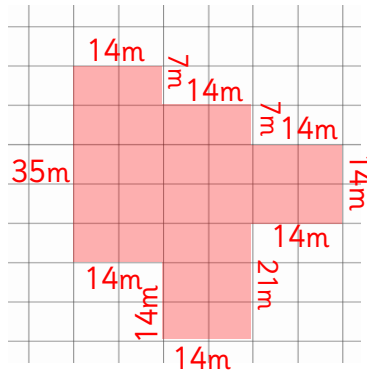
Calculate the perimeter of the shapes below.

Each square has a length of 3 cm.
What is the perimeter of the whole shape?



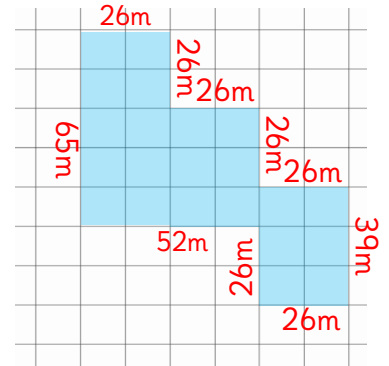
Perimeter = 72 cm

Each square has a length of 7 m.
What is the perimeter of the whole shape?



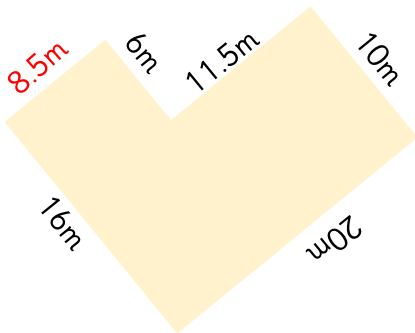
Perimeter = 182 m

Each square has a length of 13 m.
What is the perimeter of the whole shape?

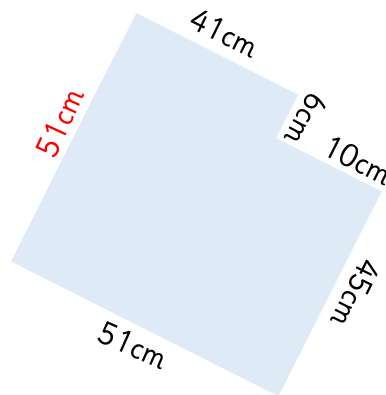


Perimeter = 338 m

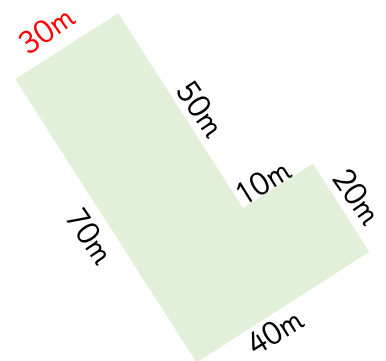
Find the perimeter of the following shapes:
(Not to scale)



Perimeter = 72 m



Perimeter = 204 cm

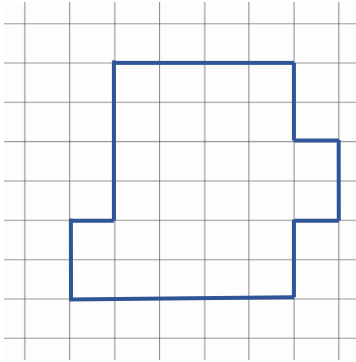


Perimeter = 220 m



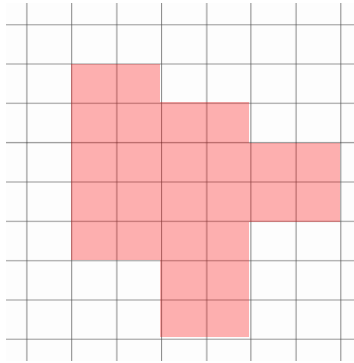
Calculate the perimeter of the shapes below.

Each square has a length of 4.5 cm.
What is the perimeter of the whole shape?



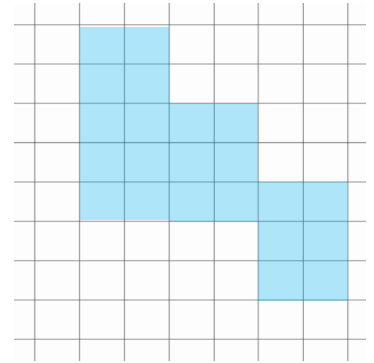
Perimeter = _____

Each square has an area of 81 m^2 .
What is the perimeter of the whole shape?



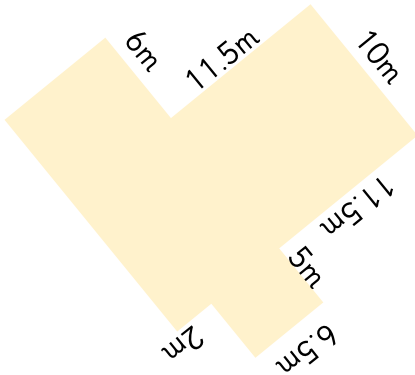
Perimeter = _____

Each square has an area of 49 m^2 .
What is the perimeter of the whole shape?

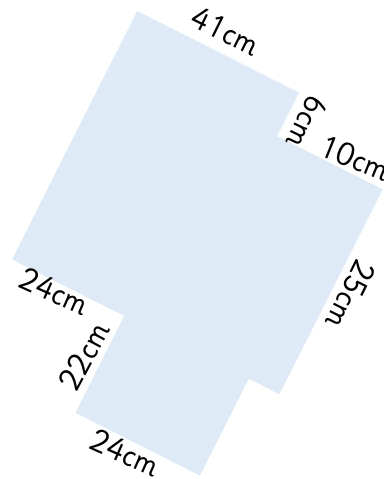


Perimeter = _____

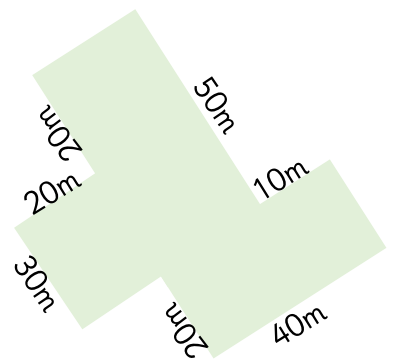
Find the perimeter of the following shapes:
(Not to scale)



Perimeter = _____



Perimeter = _____



Perimeter = _____

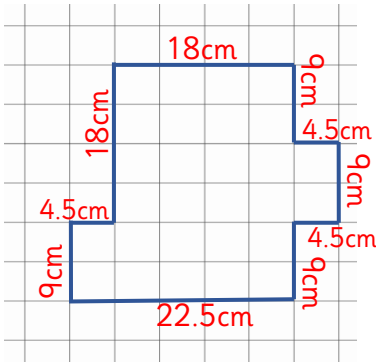


Calculate the perimeter of the shapes below.

9

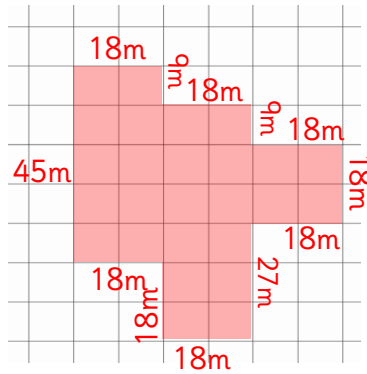
Each square has a length of 4.5 cm.

What is the perimeter of the whole shape?



Perimeter = 108 cm

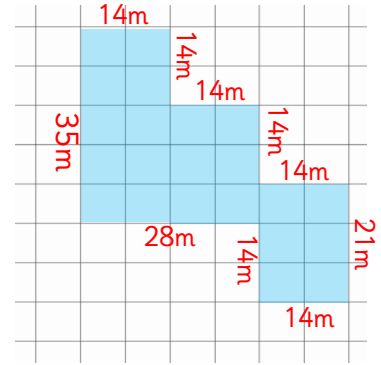
Each square has an area of 81 m^2 .
What is the perimeter of the whole shape?



Perimeter = 234 m

7

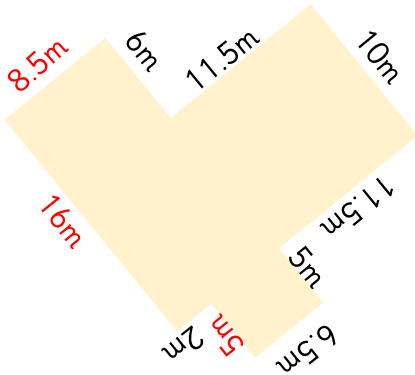
Each square has an area of 49 m^2 .
What is the perimeter of the whole shape?



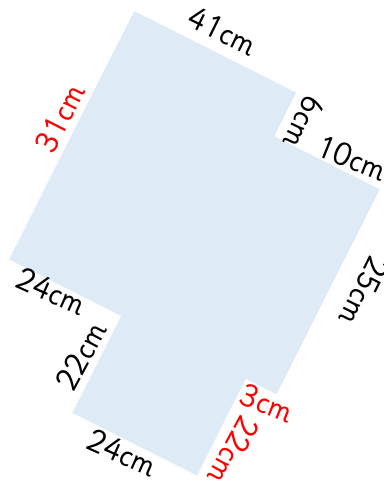
Perimeter = 182 m

Find the perimeter of the following shapes:

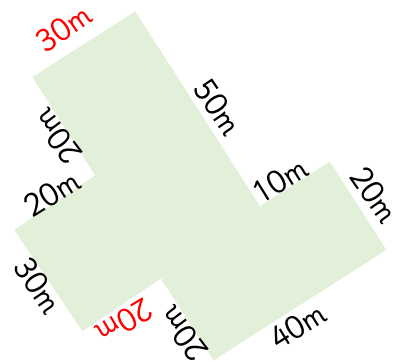
(Not to scale)



Perimeter = 82 m



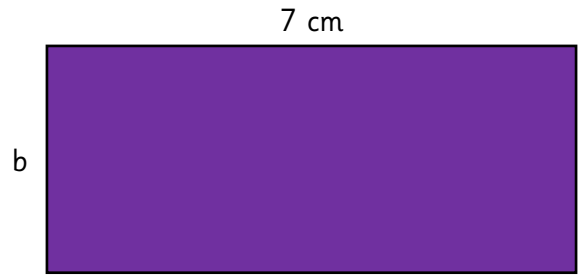
Perimeter = 208 cm



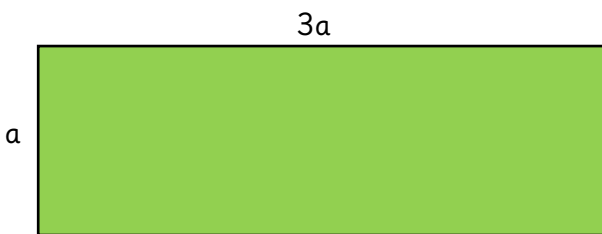
Perimeter = 260 m



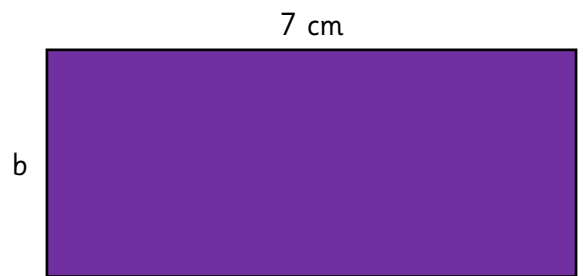
The value of a is 10 m.
What is the perimeter of the shape?



The rectangle has a perimeter of 30 cm.
What is the value of b ?



The value of a is 10 m.
What is the perimeter of the shape?



The rectangle has a perimeter of 30 cm.
What is the value of b ?


 $3a$
 a

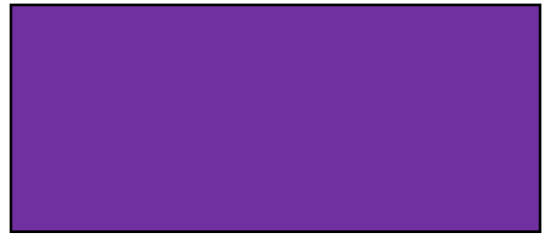

The value of a is 10 m.

What is the perimeter of the shape?

$$3a = 3 \times 10 = 30 \text{ m.}$$

$$a = 10 \text{ m}$$

$$30 \text{ m} + 30 \text{ m} + 10 \text{ m} + 10 \text{ m} = 80 \text{ m}$$

 7 cm
 b


The rectangle has a perimeter of 30 cm.

What is the value of b ?

$$\text{Total perimeter} = 30 \text{ cm.}$$

$$30 - (7 + 7) = 16$$

$$16 \text{ divided by } 2 = 8 \text{ cm}$$

$$b = 8 \text{ cm}$$


 $3a$
 a


The value of a is 10 m.

What is the perimeter of the shape?

$$3a = 3 \times 10 = 30 \text{ m.}$$

$$a = 10 \text{ m}$$

$$30 \text{ m} + 30 \text{ m} + 10 \text{ m} + 10 \text{ m} = 80 \text{ m}$$

 7 cm
 b


The rectangle has a perimeter of 30 cm.

What is the value of b ?

$$\text{Total perimeter} = 30 \text{ cm.}$$

$$30 - (7 + 7) = 16$$

$$16 \text{ divided by } 2 = 8 \text{ cm}$$

$$b = 8 \text{ cm}$$



$$2a + 5 \text{ m}$$

a



The value of a is 9 m.

What is the perimeter of the shape?

$$14 \text{ cm}$$

2b



The rectangle has a perimeter of 56 cm.

What is the value of b ?



$$2a + 5 \text{ m}$$

a



The value of a is 9 m.

What is the perimeter of the shape?

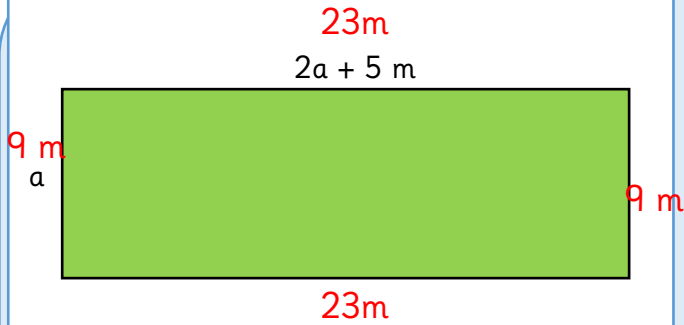
$$14 \text{ cm}$$

2b



The rectangle has a perimeter of 56 cm.

What is the value of b ?



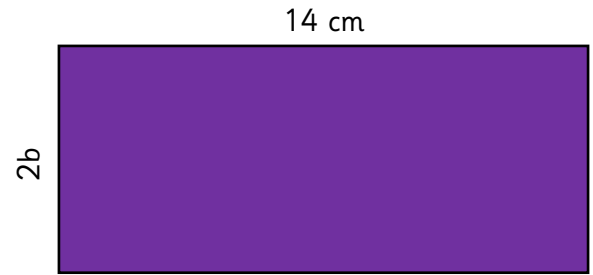
The value of a is 9 m.

What is the perimeter of the shape?

$$2a = 2 \times 9 = 18$$

$$18 \text{ m} + 5 \text{ m} = 23 \text{ m}$$

$$23 \text{ m} + 23 \text{ m} + 9 \text{ m} + 9 \text{ m} = 64 \text{ m}$$



The rectangle has a perimeter of 56 cm.

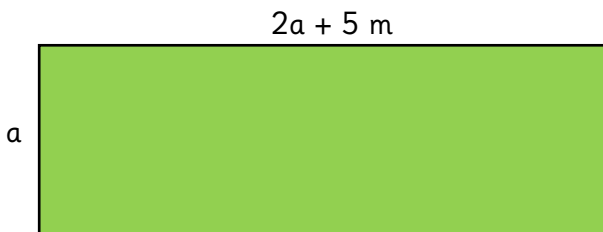
What is the value of b ?

$$\text{Total perimeter} = 56 \text{ cm.}$$

$$56 - (14 + 14) = 28.$$

$$28 \text{ divided by } 4 = 7 \text{ cm.}$$

$$b = 7 \text{ cm}$$



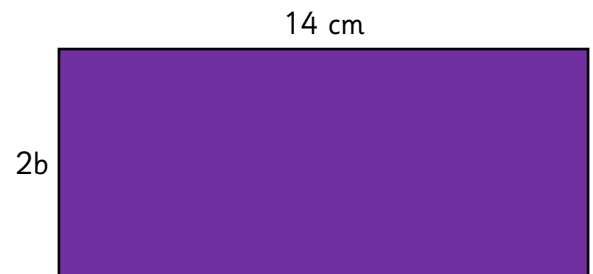
The value of a is 9 m.

What is the perimeter of the shape?

$$2a = 2 \times 9 = 18$$

$$18 \text{ m} + 5 \text{ m} = 23 \text{ m}$$

$$23 \text{ m} + 23 \text{ m} + 9 \text{ m} + 9 \text{ m} = 64 \text{ m}$$



The rectangle has a perimeter of 56 cm.

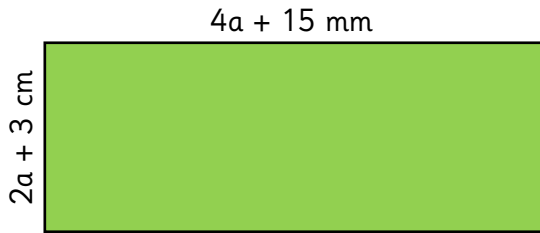
What is the value of b ?

$$\text{Total perimeter} = 56 \text{ cm.}$$

$$56 - (14 + 14) = 28.$$

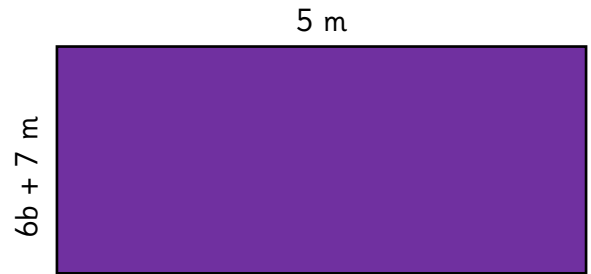
$$28 \text{ divided by } 4 = 7 \text{ cm.}$$

$$b = 7 \text{ cm}$$



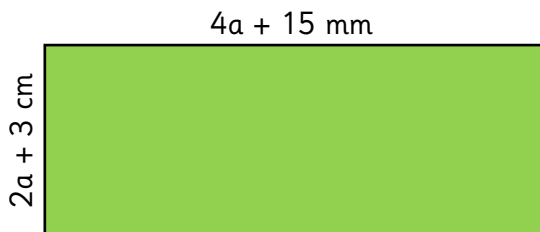
The value of a is 11 cm.

What is the perimeter of the shape?



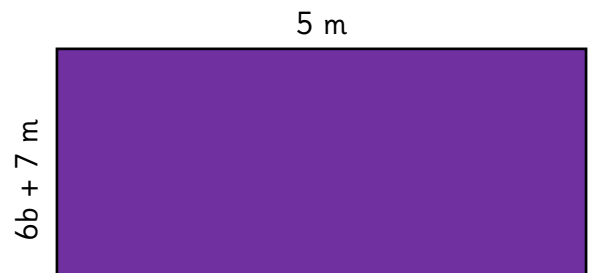
The rectangle has a perimeter of 72 m.

What is the value of b ?



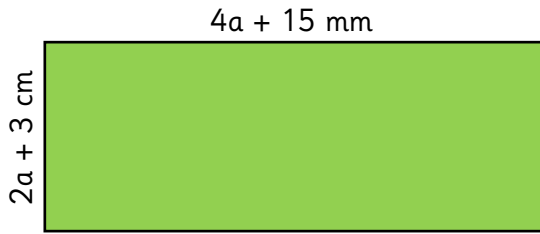
The value of a is 11 cm.

What is the perimeter of the shape?



The rectangle has a perimeter of 72 m.

What is the value of b ?



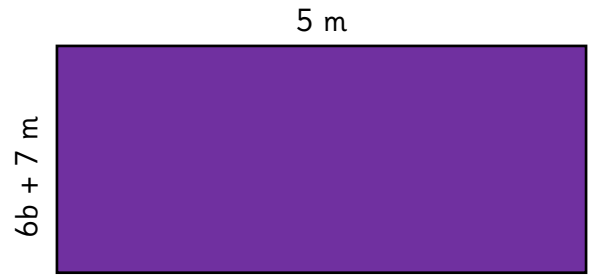
The value of a is 11 cm.

What is the perimeter of the shape?

$$4a = 4 \times 11 = 44\text{cm} + 15 \text{ mm} = 45.5 \text{ mm}$$

$$2a = 2 \times 11 = 22\text{cm} + 3 \text{ cm} = 25 \text{ cm}$$

$$\text{Perimeter} = 45.5\text{cm} + 45.5\text{cm} + 25\text{cm} + 25\text{cm} = 141\text{cm}.$$



The rectangle has a perimeter of 72 m.

What is the value of b ?

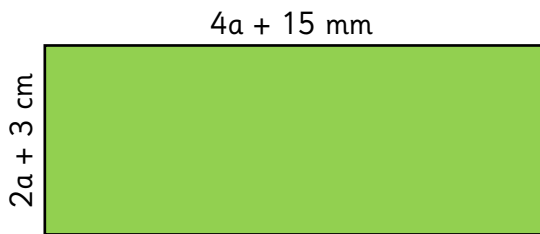
$$\text{Total perimeter} = 72 \text{ m.}$$

$$72 - (5 + 5) = 62.$$

$$6b + 7 + 6b + 7 = 12b + 14.$$

$$62 - 14 = 48.$$

$$48 \text{ divided by } 12 = 4 \text{ m.}$$



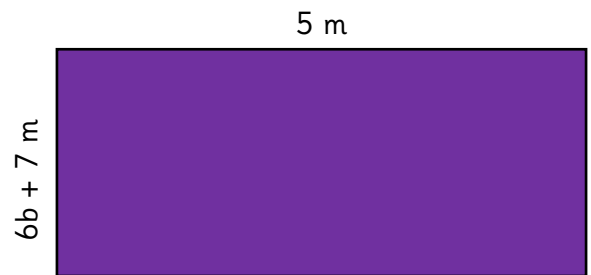
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$$2a = 2 \times 11 = 22\text{cm} + 3 \text{ cm} = 25 \text{ cm}$$

$$\text{Perimeter} = 45.5\text{cm} + 45.5\text{cm} + 25\text{cm} + 25\text{cm} = 141\text{cm}.$$



The rectangle has a perimeter of 72 m.

What is the value of b ?

$$\text{Total perimeter} = 72 \text{ m.}$$

$$72 - (5 + 5) = 62.$$

$$6b + 7 + 6b + 7 = 12b + 14.$$

$$62 - 14 = 48.$$

$$48 \text{ divided by } 12 = 4 \text{ m.}$$