

TOPIC: PERIMETER



Part (1)

Sub topic: Perimeter

Rectilinear figure

A plane figure made of line segments is called a rectilinear figure. For example, a triangle, a quadrilateral etc. are rectilinear figures.

Perimeter of a Rectilinear figures:

Definition: The sum of all sides of a rectilinear figure is called its perimeter.

OR

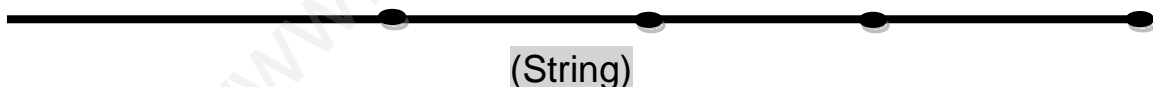
The distance around the edge of a figure is its perimeter.

Explanation: Suraj needs to put a frame around the picture he has made.



To find how much he needs to buy, he takes a string and wraps it around the picture with a knot in every corner.

This is how the string looks when he takes it off.



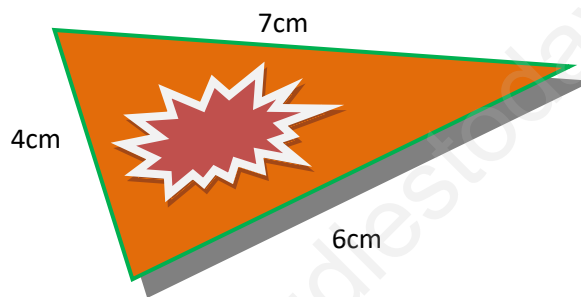
He then measures the string and finds that it is 90cm long. The string shows the length of the frame or the distance around the picture.



Thus the total length or the distance around the picture is its perimeter.

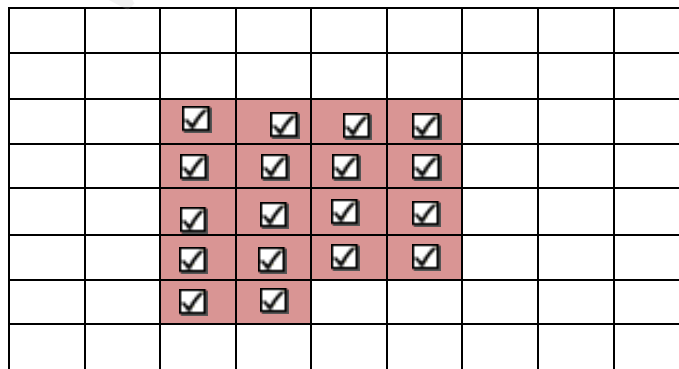
Note: Perimeter must always be expressed along with its units of length like cm, m etc.
We use 1 unit----- to measure perimeter.

Example: Find the perimeter of the following figure.



Sol: Perimeter = $4\text{cm} + 7\text{cm} + 6\text{cm} = 17\text{cm}$

Example: Find the perimeter of the following figure. Take each square to have sides of 1cm.

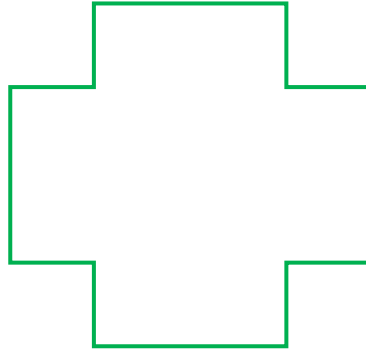


(Count the number of shaded squares to get the perimeter.)

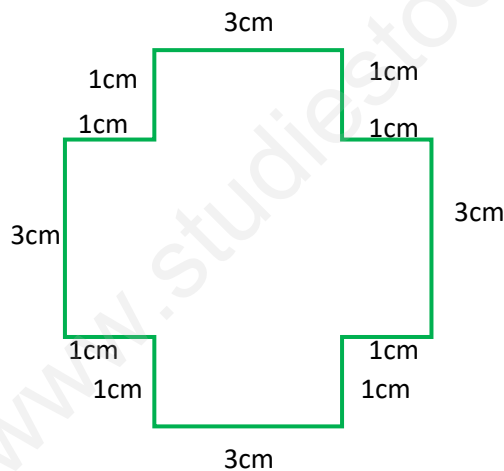
Sol: There are 18 squares that are shaded.

Therefore, Perimeter = 18cm

Example: Use a centimetre ruler to find the perimeter of the following figure.



Sol: (We can get the perimeter of the above given figure by measuring all its sides.)



Perimeter = Sum of the length of all sides.

$$\begin{aligned} &= 3\text{cm} + 1\text{cm} + 1\text{cm} + 3\text{cm} + 1\text{cm} + 1\text{cm} + 3\text{cm} + 1\text{cm} + 1\text{cm} + \\ &3\text{cm} + 1\text{cm} + 1\text{cm} = 20\text{cm} \end{aligned}$$

Example: Find the missing length of the following figure.



$$\text{Perimeter} = 20\text{cm}$$

Sol: Perimeter = 20cm

Sum of the lengths of the four sides = $4\text{cm} + 1\text{cm} + 3\text{cm} + 5\text{cm} = 13\text{cm}$

Length of the missing (fifth) side = Perimeter - sum of the lengths of the four sides

$$= 20\text{cm} - 13\text{cm}$$

$$= 7\text{cm}$$

Example: How much wire does Ahmad need to fence this garden?

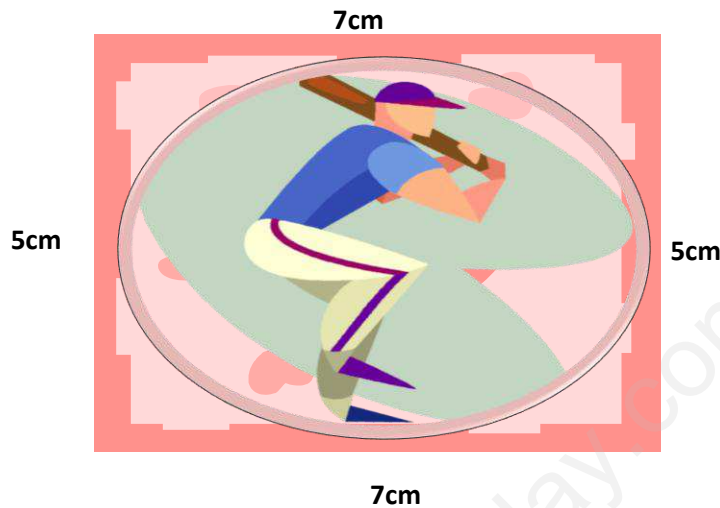


(Note: First we need to find the perimeter of this garden i.e, the total length around it.)

Sol: Perimeter of this garden = $9\text{m} + 12\text{m} + 10\text{m} = 31\text{m}$

Therefore, Ahmad needs 31m wire to fence the garden.

Example: How much distance did Rajesh cover if he has taken 5 rounds around the playground?



Sol: perimeter of the playground = $7\text{cm} + 5\text{cm} + 7\text{cm} + 5\text{cm}$
 $= 24\text{cm}$

No. of rounds taken = 5

Distance covered in 1 round = 24cm

Distance covered in 5 rounds = $24 \times 5 = 120\text{cm}$

Therefore, Rajesh covered 120cm in 5 rounds.

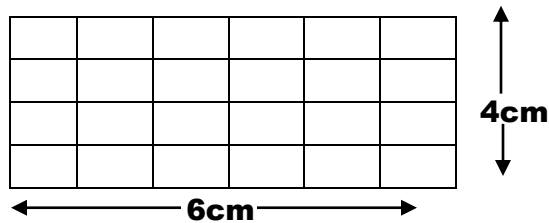


Part (2)

Sub topic: perimeter of Rectangle and Square

Perimeter of a Rectangle:

Let us consider a rectangle with length=6cm and breadth=4cm.



Perimeter of Rectangle= 2 times (sum of length and breadth)

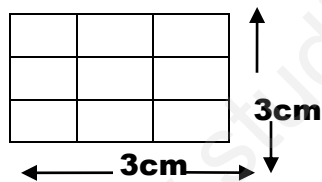
$$= 2 \times (l + b)$$

$$= 2 \times (6\text{cm} + 4\text{cm})$$

$$= 2(6\text{cm} + 4\text{cm})$$

Perimeter of a Square:

Let us consider a square with side is 3cm.



Perimeter of square= 4 times (length of each side)

$$= 4 \times 3\text{cm}$$

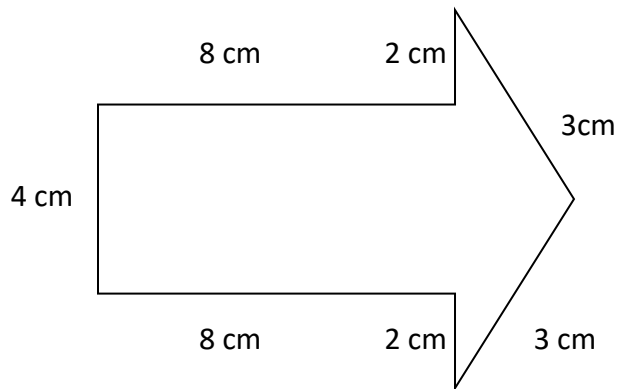
$$= 12\text{cm}.$$

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(Worksheet)

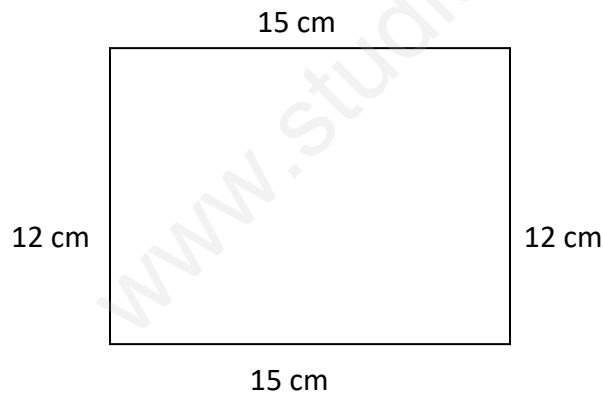
Topic: Perimeter

Q.1. Find the perimeter of the following figures.

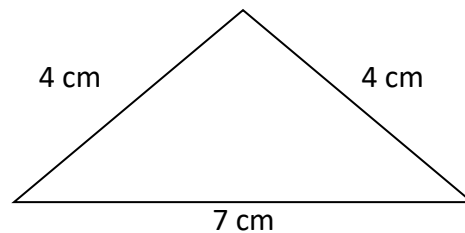
a.



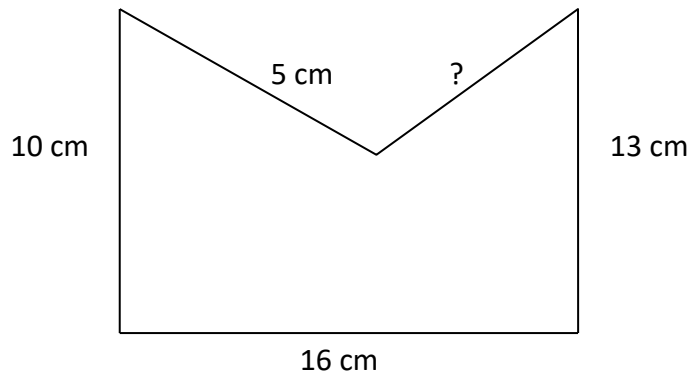
b.



c.



Q. 2. Find the missing length if the perimeter of the given figure is 51 cm.



Q. 3. What length of the wire will be needed to fence the garden if the length of a garden is 14 m and breadth 8 m?