

Perimeter and Area

Chapter 11

EXERCISE 11.1



1. The length and the breadth of a rectangular piece of land are 500 m and 300 m respectively. Find
 - (i) its area
 - (ii) the cost of the land, if 1 m^2 of the land costs ₹ 10,000.
2. Find the area of a square park whose perimeter is 320 m.
3. Find the breadth of a rectangular plot of land, if its area is 440 m^2 and the length is 22 m. Also find its perimeter.
4. The perimeter of a rectangular sheet is 100 cm. If the length is 35 cm, find its breadth. Also find the area.
5. The area of a square park is the same as of a rectangular park. If the side of the square park is 60 m and the length of the rectangular park is 90 m, find the breadth of the rectangular park.
6. A wire is in the shape of a rectangle. Its length is 40 cm and breadth is 22 cm. If the same wire is rebent in the shape of a square, what will be the measure of each side.

Also find which shape encloses more area?



Fig 11.6

7. The perimeter of a rectangle is 130 cm. If the breadth of the rectangle is 30 cm, find its length. Also find the area of the rectangle.
8. A door of length 2 m and breadth 1 m is fitted in a wall. The length of the wall is 4.5 m and the breadth is 3.6 m (Fig 11.6). Find the cost of white washing the wall, if the rate of white washing the wall is ₹ 20 per m^2 .

CHAPTER : 11 PERIMETER AND AREA

Exercise : 11.1 (Solutions)

1 Sol. (i) Length of rectangular piece of land (l) = 500m

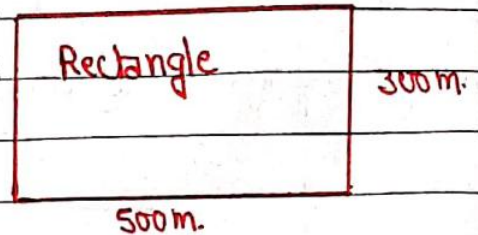
Breadth (b) of rectangular piece of land = 300m

Area of rectangular piece of land = $l \times b$

$$= 500 \text{ m} \times 300 \text{ m}$$

$$= (500 \times 300) \text{ m}^2$$

$$= 150000 \text{ m}^2$$



(ii) Cost of 1 m^2 of the land = ₹ 10,000

Cost of 150000 m^2 of the land = ₹ $(10,000 \times 150000)$

$$= ₹ 1,50,00,00,000$$

2 Sol.

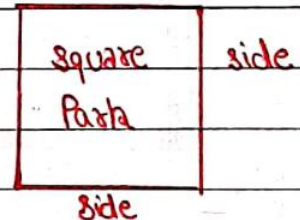
We know, Perimeter of a square = $4 \times \text{side}$

Given, Perimeter of a square park = 320 m

$$4 \times \text{side} = 320 \text{ m}$$

$$\text{side} = \frac{320}{4} \text{ m}$$

$$\text{side} = 80 \text{ m.}$$



Now, Area of a square park = $\text{Side} \times \text{side}$

$$= 80 \text{ m} \times 80 \text{ m}$$

$$= (80 \times 80) \text{ m}^2$$

$$= 6400 \text{ m}^2$$

3.Sol :

Let the breadth of a rectangular plot of land = b m.

Given the length of a rectangular plot of land = 22 m

Area of a rectangular plot of land = 440 m^2

i.e. $l \times b = 440 \text{ m}^2$

$$22 \text{ m} \times b = 440 \text{ m}^2$$

$$b = \frac{440}{22} \text{ m}$$

$$b = 20 \text{ m}$$

rectangular
plot of land.

b m.

22 m .

Now, Perimeter of a rectangular plot of land = $2 \times (l + b)$

$$= 2 \times (22 \text{ m} + 20 \text{ m})$$

$$= 2 \times 42 \text{ m}$$

$$= 84 \text{ m}$$

4.Sol

Let, the breadth of a rectangular sheet = b cm.

Given, the length of a rectangular sheet = 35 cm.

Perimeter of a rectangular sheet = 100 cm.

i.e. $2 \times (l + b) = 100 \text{ cm}$

$$2 \times (35 + b) = 100 \text{ cm}$$

$$35 + b = \frac{100}{2} \text{ cm}$$

$$35 + b = 50 \text{ cm}$$

$$b = 50 - 35 \text{ cm}$$

$$b = 15 \text{ cm}$$

Rectangular
Sheet.

b cm.

35 cm

Now, Area of a rectangular sheet = $l \times b$

$$= 35 \text{ cm} \times 15 \text{ cm}$$

$$= 525 \text{ cm}^2$$

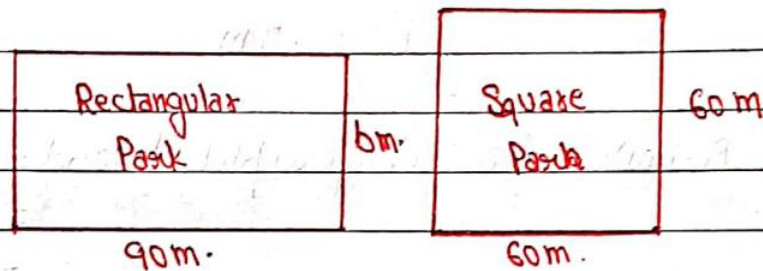
5. Sol.

Side of the square park = 60 m.

$$\begin{aligned}\text{Area of the square park} &= \text{Side} \times \text{Side} \\ &= 60 \text{ m} \times 60 \text{ m} \\ &= 3600 \text{ m}^2\end{aligned}$$

Let, the breadth of the rectangular park = b m.

Given, the length of the rectangular park = 90 m.



Given : Area of rectangular Park = Area of square Park

i.e. $l \times b = \text{Side} \times \text{Side}$

$$90 \times b = 3600$$

$$b = \frac{3600}{90} \text{ m}$$

$$b = 40 \text{ m.}$$

6. Sol.

Length of rectangle = 40 cm.

Breadth of rectangle = 22 cm

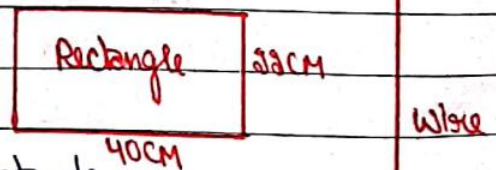
Total length of the wire = Perimeter of rectangle

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

$$= 2 \times (40 \text{ cm} + 22 \text{ cm})$$

$$= 2 \times 62 \text{ cm}$$

$$= 124 \text{ cm}$$

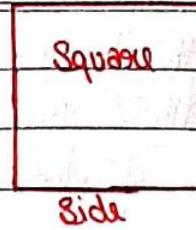


If the same wire is subent in the shape of a square, then
Perimeter of the square = 124 cm.

$$4 \times \text{Side} = 124 \text{ cm.}$$

$$\text{Side} = \frac{124}{4} \text{ cm.}$$

$$\text{Side} = 31 \text{ cm.}$$



Side

Wire

$$\begin{aligned} \text{Area of Rectangle} &= l \times b \\ &= 40 \text{ cm} \times 22 \text{ cm} \\ &= 880 \text{ cm}^2 \end{aligned}$$

$$\begin{aligned} \text{Area of Square} &= \text{Side} \times \text{Side} \\ &= 31 \text{ cm} \times 31 \text{ cm} \\ &= 961 \text{ cm}^2 \end{aligned}$$

Hence, Square encloses more area.

7. Sol.

Let, the length of a rectangle = l cm.

Given, the Breadth of a rectangle = 30 cm.

Perimeter of a rectangle = 130 cm.

$$2 \times (l + b) = 130 \text{ cm}$$

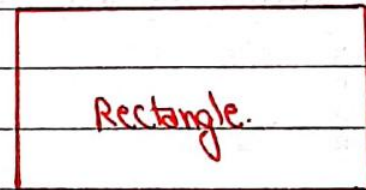
$$2 \times (l + 30 \text{ cm}) = 130 \text{ cm.}$$

$$l + 30 \text{ cm} = \frac{130}{2} \text{ cm.}$$

$$l + 30 \text{ cm} = 65 \text{ cm.}$$

$$l = 65 \text{ cm} - 30 \text{ cm.}$$

$$l = 35 \text{ cm.}$$



30 cm.

l cm.

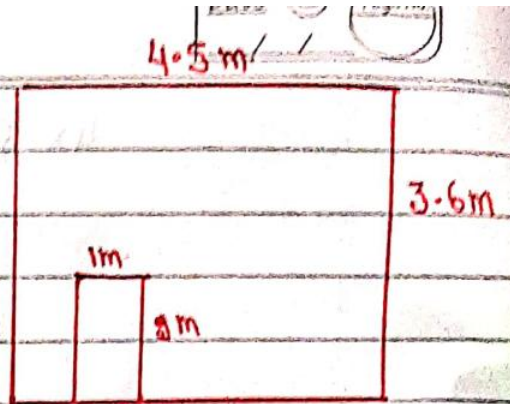
$$\begin{aligned} \text{Now, Area of the rectangle} &= l \times b \\ &= 35 \text{ cm} \times 30 \text{ cm} \\ &= 1050 \text{ cm}^2. \end{aligned}$$

8-Sol.

Length of door = 2m.

Breadth of door = 1m.

$$\begin{aligned}\text{Area of door} &= 2\text{m} \times 1\text{m} \\ &= 2\text{m}^2\end{aligned}$$



Length of the wall = 4.5m.

Breadth of the wall = 3.6m.

$$\begin{aligned}\text{Area of the wall} &= 4.5\text{m} \times 3.6\text{m} \\ &= (4.5 \times 3.6)\text{m}^2 \\ &= 16.20\text{m}^2\end{aligned}$$

$$\begin{aligned}\text{Area of the wall to be white washed} &= \text{Area of wall} - \text{Area of door} \\ &= 16.20\text{m}^2 - 2\text{m}^2 \\ &= 14.20\text{m}^2\end{aligned}$$

Cost of white washing 1m^2 = ₹ 20

$$\begin{aligned}\text{Cost of white washing } 14.20\text{m}^2 &= ₹ (20 \times 14.20) \\ &= ₹ 284\end{aligned}$$

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