

Exercise 11.1

Question 1:

The length and 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 m² of the land costs ₹10,000.

Answer 1:

Given: Length of a rectangular piece of land = 500 m and

Breadth of a rectangular piece of land = 300 m

- (i) Area of a rectangular piece of land = Length x Breadth
= 500 x 300
= 1,50,000 m²
- (ii) Since, the cost of 1 m² land = ₹10,000
Therefore, the cost of 1,50,000 m² land = 10,000 x 1,50,000
= ₹1,50,00,00,000

Question 2:

Find the area of a square park whose perimeter is 320 m.

Answer 2:

Given: Perimeter of square park = 320 m

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

$$\Rightarrow \text{side} = \frac{320}{4} = 80 \text{ m}$$

Now, Area of square park = side x side = 80 x 80 = 6400 m²

Thus, the area of square park is 6400 m².

Question 3:

Find the breadth of a rectangular plot of land, if its area is 440 m² and the length is 22 m. Also find its perimeter.

Answer 3:

Area of rectangular park = 440 m²

$$\Rightarrow \text{length} \times \text{breadth} = 440 \text{ m}^2$$

$$\Rightarrow 22 \times \text{breadth} = 440$$

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$$\Rightarrow \text{breadth} = \frac{440}{22} = 20 \text{ m}$$

$$\begin{aligned}\text{Now, Perimeter of rectangular park} &= 2 (\text{length} + \text{breadth}) \\ &= 2 (22 + 20) \\ &= 2 \times 42 = 84 \text{ m}\end{aligned}$$

Thus, the perimeter of rectangular park is 84 m.

Question 4:

The perimeter of a rectangular sheet is 100 cm. If the length is 35 cm, find its breadth. Also find the area.

Answer 4:

Perimeter of the rectangular sheet = 100 cm

$$\Rightarrow 2 (\text{length} + \text{breadth}) = 100 \text{ cm}$$

$$\Rightarrow 2 (35 + \text{breadth}) = 100$$

$$\Rightarrow 35 + \text{breadth} = \frac{100}{2}$$

$$\Rightarrow 35 + \text{breadth} = 50$$

$$\Rightarrow \text{breadth} = 50 - 35$$

$$\Rightarrow \text{breadth} = 15 \text{ cm}$$

$$\begin{aligned}\text{Now, Area of rectangular sheet} &= \text{length} \times \text{breadth} \\ &= 35 \times 15 = 525 \text{ cm}^2\end{aligned}$$

Thus, breadth and area of rectangular sheet are 15 cm and 525 cm² respectively.

Question 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 cm, find the breadth of the rectangular park.

Answer 5:

Given: The side of the square park = 60 m

The length of the rectangular park = 90 m

According to the question,

Area of square park = Area of rectangular park

$$\Rightarrow \text{side} \times \text{side} = \text{length} \times \text{breadth}$$

$$\Rightarrow 60 \times 60 = 90 \times \text{breadth}$$

$$\Rightarrow \text{breadth} = \frac{60 \times 60}{90} = 40 \text{ m}$$

Thus, the breadth of the rectangular park is 40 m.

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Question 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?

Answer 6:

According to the question,

Perimeter of square = Perimeter of rectangle

$$\Rightarrow 4 \times \text{side} = 2 (\text{length} + \text{breadth})$$

$$\Rightarrow 4 \times \text{side} = 2 (40 + 22)$$

$$\Rightarrow 4 \times \text{side} = 2 \times 62$$

$$\Rightarrow \text{side} = \frac{2 \times 62}{4} = 31 \text{ cm}$$

Thus, the side of the square is 31 cm.

Now, Area of rectangle = length x breadth = $40 \times 22 = 880 \text{ cm}^2$

And Area of square = side x side = $31 \times 31 = 961 \text{ cm}^2$

Therefore, on comparing, the area of square is greater than that of rectangle.

Question 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.

Answer 7:

Perimeter of rectangle = 130 cm

$$\Rightarrow 2 (\text{length} + \text{breadth}) = 130 \text{ cm}$$

$$\Rightarrow 2 (\text{length} + 30) = 130$$

$$\Rightarrow \text{length} + 30 = \frac{130}{2}$$

$$\Rightarrow \text{length} + 30 = 65$$

$$\Rightarrow \text{length} = 65 - 30 = 35 \text{ cm}$$

Now area of rectangle = length x breadth = $35 \times 30 = 1050 \text{ cm}^2$

Thus, the area of rectangle is 1050 cm^2 .

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Question 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. Find the cost of white washing the wall, if the rate of white washing the wall is ₹ 20 per m^2 .



Answer 8:

Area of rectangular door = length \times breadth = 2 m \times 1 m = 2 m^2

Area of wall including door = length \times breadth = 4.5 m \times 3.6 m = 16.2 m^2

Now, Area of wall excluding door

= Area of wall including door – Area of door

= 16.2 – 2 = 14.2 m^2

Since, The rate of white washing of 1 m^2 the wall = ₹20

Therefore, the rate of white washing of 14.2 m^2 the wall = 20 \times 14.2
= ₹284

Thus, the cost of white washing the wall excluding the door is ₹284.