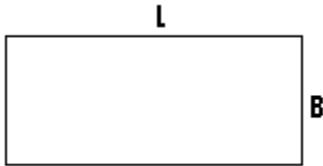


CHAPTER SIX

The Perimeter, Area And Volume of Common Geometrical Figures.

The rectangle:



L = the length.

B = the breadth.

- A rectangle is a four sided figure, whose opposite sides are parallel and equal.
- The perimeter of a figure is the distance around it, and as such, the perimeter of a rectangle is the distance around it.
- The perimeter of a rectangle is given by:
 - (a) $P = 2L + 2B$.
 - (b) $P = 2(L + B)$.

Where L = the length and B = the breadth.

(Q1) A rectangle has a length of 20cm and a breadth of 8cm. Calculate its perimeter.

Soln:

L = 20cm and B = 8cm.

But since $P = 2L + 2B$

$$\Rightarrow P = 2(20) + 2(8),$$

$$\Rightarrow p = 40 + 16,$$

$$\Rightarrow P = 56\text{cm}.$$

Method 2

$L = 20\text{cm}$ and $B = 8\text{cm}$.

But since $P = 2 (L + B)$

$$\Rightarrow P = 2(20 + 8), \Rightarrow P = 2(28)$$

$$\Rightarrow P = 2 \times 28 = 56\text{cm}.$$

(Q2) The length of a rectangle is 15m and its breadth is 10m. Find its perimeter.

Soln:

$L = 15\text{m}$ and $B = 10\text{m}$.

$$P = 2L + 2B \Rightarrow P = 2(15) + 2(10),$$

$$\Rightarrow P = 30 + 20 = 50\text{m}.$$

N/B: The breadth of a rectangle is also called the width.

(Q3) A rectangle has a length of 6cm and a width of 3cm. Calculate its perimeter.

Soln:

Width = breadth = $B = 3\text{cm}$.

Length = $L = 6\text{cm}$.

$$P = 2L + 2B$$

$$\Rightarrow P = 2(6) + 2(3),$$

$$\Rightarrow P = 12 + 6, \Rightarrow P = 18\text{cm}.$$

(Q4) A rectangle is of length 100cm and breadth 80cm. Find the distance around it.

Soln:

$L = 100\text{cm}$ and $B = 80\text{cm}$.

The distance around the rectangle = the perimeter

$$= 2(L + B).$$

$$\Rightarrow P = 2(100 + 80) \Rightarrow P = 2(180),$$

$$\Rightarrow P = 360\text{cm}.$$

(Q5) A rectangular plot of land is 40m long and 30m wide. Find the distance around it.

Soln:

Length = $L = 40\text{m}$.

Width = $B = 30\text{m}$.

$$P = 2(L + B) \Rightarrow P = 2(40 + 30),$$

$$\Rightarrow P = 2(70) \Rightarrow P = 140\text{m}.$$

(Q6) The length of a rectangle is 6m. Find its breadth, if its perimeter is 36m.

Soln:

$L = 6\text{m}$, $P = 36\text{m}$ and $B = ?$

But since $P = 2L + 2B$

$$\Rightarrow 36 = 2(6) + 2B,$$

$$\Rightarrow 36 = 12 + 2B$$

$$\Rightarrow 36 - 12 = 2B,$$

$$\Rightarrow 24 = 2B.$$

$$\Rightarrow 2B = 24.$$

Divide through using 2 since 2 is attached to the B.

$$\text{i.e. } \frac{2B}{2} = \frac{24}{2}$$

$$\Rightarrow B = 12.$$

\Rightarrow The breadth = 12m.