

Practice Set 16.1

1. Find the volume of a box if its length, breadth and height are 20 cm, 10.5 cm and 8 cm respectively.

Soln:- For a box,

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

$$b = 10.5 \text{ cm}$$

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

Volume of the box

$$= l \cdot b \cdot h$$

$$= 20 \times 10.5 \times 8$$

$$= 160 \times 10.5$$

$$= 16 \times 105$$

$$= \underline{1680 \text{ cm}^3}$$

2. A cuboid shape soap bar has volume 150 cc. Find its thickness if its length is 10 cm and breadth is 5 cm.

Soln:- For a cuboid shaped soap bar,

$$V = 150 \text{ cc} = 150 \text{ cm}^3$$

$$l = 10 \text{ cm}$$

$$b = 5 \text{ cm}$$

$$h = ?$$

Volume of a cuboid = $l b h$

$$150 = 10 \times 5 \times h$$

$$\therefore h = \frac{\overset{3}{\cancel{150}}}{\cancel{10} \times \cancel{5}} \underset{1}{}$$

$$\therefore \boxed{h = 3 \text{ cm}}$$

\therefore Thickness of the soap bar = 3 cm.

3. How many bricks of length 25 cm, breadth 15 cm and height 10 cm are required to build a wall of length 6 m, height 2.5 m and breadth 0.5 m?

Soln:- For bricks,

$$l = 25 \text{ cm}$$

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

$$h = 10 \text{ cm}$$

For wall,

$$l = 6 \text{ m} = 600 \text{ cm}$$

$$h = 2.5 \text{ m} = 250 \text{ cm}$$

$$b = 0.5 \text{ m} = 50 \text{ cm}$$

\therefore No. of bricks required to build the wall

$$\begin{aligned} &= \frac{\text{Vol. of wall}}{\text{vol. of brick}} \\ &= \frac{\overset{4}{\cancel{600}} \times 250 \times \overset{2}{\cancel{50}}}{\underset{1}{\cancel{25}} \times \underset{1}{\cancel{15}} \times \cancel{10}} \\ &= 4 \times 250 \times 2 \\ &= \underline{2000 \text{ bricks}} \end{aligned}$$

4. For rain water harvesting a tank of length 10 m, breadth 6 m and depth 3m is built. What is the capacity of the tank ? How many litre of water can it hold?

Solⁿ:- For a tank,

$$l = 10 \text{ m} = 1000 \text{ cm}$$

$$b = 6 \text{ m} = 600 \text{ cm}$$

$$h = 3 \text{ m} = 300 \text{ cm}$$

Capacity of the tank = vol. of the tank

$$= l b h$$

$$= 1000 \times 600 \times 300$$

$$= 18,00,00,000 \text{ cm}^3$$

$$= \frac{18,00,00,\cancel{000}}{\cancel{1000}} \text{ litre}$$

Capacity of
the tank = 1,80,000 litre.