

Ex. 15.3

volume of a cube = Side \times Side \times Side
volume of a cuboid = Length \times breadth \times height

B- Find the volume of cube whose edge is

1- 7cm

Sol. edge = 7cm.

volume of cube = edge \times edge \times edge

$$= 7\text{cm} \times 7\text{cm} \times 7\text{cm}$$

$$= 343 \text{ Cu. cm. or cm}^3$$

2- Edge = 12.5 cm.

volume of cube = edge \times edge \times edge

$$= 12.5 \text{ cm} \times 12.5 \text{ cm} \times 12.5 \text{ cm}$$

$$= 1953.125 \text{ cm}^3$$

3 - Edge = 2.5 cm

Volume of cube = edge \times edge \times edge

= 2.5 cm \times 2.5 cm \times 2.5 cm

= 15.625 cm³

4 - Edge = 9.5 cm

Volume of cube = edge \times edge \times edge

= 9.5 cm \times 9.5 cm \times 9.5 cm

= 857.375 cm³

Do Qs 5, 6, 7, 8 parts yourself in H.W.

C - Find the volume of cuboid whose dimensions is:

1 - length = 11 cm, breadth = 9 cm, height = 5 cm

R.W

$$\begin{array}{r} 4 \\ 99 \\ \times 5 \\ \hline 495 \end{array}$$

Sol. volume of cuboid = $L \times B \times H$
 $= 11\text{cm} \times 9\text{cm} \times 5\text{cm}$
 $= 495\text{ cm}^3$

2- Length = 8cm, breadth = 4cm, height = 3cm

$$\begin{array}{r} 32 \\ \times 3 \\ \hline 96 \end{array}$$

Sol. volume of cuboid = $L \times B \times H$
 $= 8\text{cm} \times 4\text{cm} \times 3\text{cm}$
 $= 96\text{ cm}^3$

3- Length = 7.5cm, breadth = 5.3cm, height = 4.1cm

Sol. volume of cuboid = $L \times B \times H$
 $= 7.5\text{cm} \times 5.3\text{cm} \times 4.1\text{cm}$
 $= 162.975\text{ cm}^3$

D How many - - - - - thick?

Sol. Length of brick = 25cm

breadth of brick = 6cm

$$\text{height of brick} = 12.5 \text{ cm}$$

$$\text{volume of brick} = L \times B \times H$$

$$= 25 \text{ cm} \times 6 \text{ cm} \times 12.5 \text{ cm}$$

$$= 1875 \text{ cm}^3$$

$$\text{Length of floor} = 12 \text{ m} = 12 \times 100 = 1200 \text{ cm}$$

$$\text{breadth of floor} = 25 \text{ cm}$$

$$\text{height of floor} = 1.5 \text{ m} = 1.5 \times 100 \text{ cm} = 150 \text{ cm}$$

$$\therefore \text{No. of bricks} = \frac{\text{volume of floor}}{\text{volume of brick}}$$

$$\text{volume of brick} = L \times B \times H$$

$$= 1200 \text{ cm} \times 25 \text{ cm} \times 150 \text{ cm}$$

$$= 4500000 \text{ cm}^3$$

$$\therefore \text{No. of bricks required} = \frac{\text{Volume of floor}}{\text{Volume of brick}}$$

$$1875 \overline{) 4500000} \approx 2400 \quad = \frac{4500000 \text{ cm}^3}{1875 \text{ cm}^3} = 2400 \text{ bricks}$$

$$\begin{array}{r} 3750 \\ \underline{7500} \\ 7500 \\ \underline{} \\ 00 \\ \underline{} \\ 00 \\ \underline{} \\ X \end{array}$$

E - Which has the _____ 7cm?

Sol. Length of 1st box = 15cm

Breadth of 1st box = 8cm

Height of 1st box = 6cm

$$\text{Volume of 1st box} = L \times B \times H$$

$$= 15 \text{ cm} \times 8 \text{ cm} \times 6 \text{ cm}$$

$$= 120 \text{ cm}^2 \times 6 \text{ cm}$$

$$= 720 \text{ cm}^3$$

$$\text{Length of 2nd box} = 8\text{cm}$$

$$\text{breadth of 2nd box} = 7\text{cm}$$

$$\text{height of 2nd box} = 6\text{cm}$$

$$\text{volume of 2nd box} = L \times B \times H$$

$$= 8\text{cm} \times 7\text{cm} \times 6\text{cm}$$
$$= 336\text{cm}^3$$

\therefore box 1st has greater volume.

F. A book is 20cm - - - - - occupy?

sol. Length of book = 20cm

breadth of book = 5cm

Height of book = 18cm

$$\text{volume of book} = L \times B \times H$$
$$= 20\text{cm} \times 5\text{cm} \times 18\text{cm}$$
$$= 1800\text{cm}^3$$

\therefore The book occupy 1800 cm^3 space.

G1- Find the volume — — — — — breadth.

Sol. Length of water tank = 3 m

breadth of water tank = 2.2 m

height of water tank = 1.3 m

$$\begin{aligned}\therefore \text{ volume of water tank} &= L \times B \times H \\ &= 3 \text{ m} \times 2.2 \text{ m} \times 1.3 \text{ m} \\ &= 8.58 \text{ cu.m.}\end{aligned}$$

H. A Cuboid is — — — — — volume?

Sol. Length of cuboid = 8 cm

breadth of cuboid = 5 cm

$$\text{height of cuboid} = 4\text{cm}$$

$$\text{volume of cuboid} = L \times B \times H$$

$$= 8\text{cm} \times 5\text{cm} \times 4\text{cm}$$

$$= 160\text{cm}^3$$

$$\text{Edge of cube} = 8\text{cm}$$

$$\text{volume of cube} = \text{edge} \times \text{edge} \times \text{edge}$$

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

$$= 512\text{cm}^3$$

\therefore volume of cube is greater.

I- A trench ————— Trench?

$$\text{Sol. Length of trench} = 40\text{m}$$

$$\text{breadth of trench} = 3\text{m}$$

height of trench = 3m

$$\begin{aligned}\therefore \text{volume of trench} &= L \times B \times H \\ &= 40\text{m} \times 3\text{m} \times 3\text{m} \\ &= 360\text{m}^3\end{aligned}$$

\therefore 360 m³ of earth was removed to dig a trench.