

St. Andrews Scots Sr. Sec. School

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Session: 2024-2025

Class: V

Subject: Mathematics

Topic: unit 15- Volume

Question to be done:-

Introduction of chapter

Warm up

Volume of cube and cuboid

Ex:-15

Q1- b, d (notebook)

Q2- b, c(notebook)

Q3- (H. W)

Q4- (notebook)

Q5,Q6,Q8 and Q10(a)(notebook)

Worksheet

Exercise 15

1. (a) $l = 18$ cm, $b = 12$ cm, $h = 7$ cm

$$\text{Volume of cuboid} = l \times b \times h = 18 \times 12 \times 7 = 1512 \text{ cubic. cm}$$

- (b) $l = 12.5$ cm, $b = 10$ cm, $h = 5$ cm

$$\text{Volume of cuboid} = l \times b \times h = 12.5 \times 10 \times 5 = 625 \text{ cubic. cm}$$

- (c) $l = 4.8$ m, $b = 3.2$ m, $h = 1$ m

$$\text{Volume of cuboid} = l \times b \times h = 4.8 \times 3.2 \times 1 = 15.36 \text{ cubic. m}$$

- (d) $l = 28$ cm, $b = 15$ cm, $h = 10$ cm

$$\text{Volume of cuboid} = l \times b \times h = 28 \times 15 \times 10 = 4200 \text{ cubic. cm}$$

2. (a) Side of cube = 42 cm

$$\text{Volume of cube} = \text{side} \times \text{side} \times \text{side} = 42 \times 42 \times 42 = 74088 \text{ cubic. cm}$$

- (b) Side of cube = $13\frac{1}{2}$ cm = $\frac{27}{2}$ cm

$$\text{Volume of cube} = \text{side} \times \text{side} \times \text{side}$$

$$= \frac{27}{2} \times \frac{27}{2} \times \frac{27}{2} = \frac{19683}{8} \text{ cubic. cm}$$

$$= 2460\frac{3}{8} \text{ cubic. cm}$$

(c) Side of cube = 6.50 m

$$\begin{aligned}\text{Volume of cube} &= \text{side} \times \text{side} \times \text{side} \\ &= 6.50 \times 6.50 \times 6.50 = 274.63 \text{ cubic. m}\end{aligned}$$

(d) Side of cube = 8.5 cm

$$\begin{aligned}\text{Volume of cube} &= \text{side} \times \text{side} \times \text{side} \\ &= 8.5 \times 8.5 \times 8.5 = 614.13 \text{ cubic. cm}\end{aligned}$$

3. Length of cuboidal box = 16 cm

Breadth of cuboidal box = 11.5 cm

Height of cuboidal box = 5 cm

$$\text{Volume of cuboidal box} = l \times b \times h = 16 \times 11.5 \times 5 = 920 \text{ cubic. cm}$$

4. Length of room = 12 m

Breadth of room = 7.5 m

Height of room = 6 m

$$\text{Volume of room} = 12 \times 7.5 \times 6 = 540 \text{ cubic. m}$$

Thus, the room contains 540 cubic. m of air

5. Volume of larger box = $(60 \times 48 \times 36) = 103680$ cubic. cm

Volume of small box = $(12 \times 8 \times 6) = 576$ cubic. cm

$$\text{Number of boxes packed} = \frac{\text{Volume of larger box}}{\text{Volume of small box}} = \frac{103680}{576} = 180$$

6. Volume of wooden block = $l \times b \times h = 24 \times 18 \times 15 = 6480$ cubic. cm

Volume of cubical block = side \times side \times side = $6 \times 6 \times 6 = 216$ cubic. cm

$$\text{Number of cubical blocks} = \frac{6480}{216} = 30$$

7. Volume of cube = $10 \times 10 \times 10 = 1000$ cubic. m

Volume of cuboid = $l \times b \times h = 8 \times 5 \times 3 = 120$ cubic. m

Volume of cube is more by = $1000 - 120 = 880$ cubic. m

8. Volume of a brick = $25 \times 16 \times 7.5 = 3000$ cubic. cm

Length of wall = 5 m = 500 cm

Width of wall = 3 m = 300 cm

Height of wall = 80 cm

$$\text{Volume of wall} = l \times b \times h = 500 \times 300 \times 80 = 12000000 \text{ cubic. cm}$$

$$\text{Number of bricks} = \frac{\text{Volume of wall}}{\text{Volume of a brick}} = \frac{12000000}{3000} = 4000 \text{ bricks}$$

9. Volume of cuboidal tank = $l \times b \times h = 6.5 \times 2.4 \times 1.5 = 23.4$ cubic. m

Hence the capacity of tank = 23.4 cubic. m

10. Cuboid

$$l = 3 \text{ cm}$$

$$b = 2 \text{ cm}$$

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

$$\text{Volume} = l \times b \times h$$

$$= 3 \times 2 \times 5$$

$$= 30 \text{ cubic. cm}$$

Cube

$$\text{Length} = 3.5 \text{ cm}$$

$$\text{Volume} = \text{Length} \times \text{Length} \times \text{Length}$$

$$= 3.5 \times 3.5 \times 3.5$$

$$= 42.88 \text{ cubic. cm}$$

