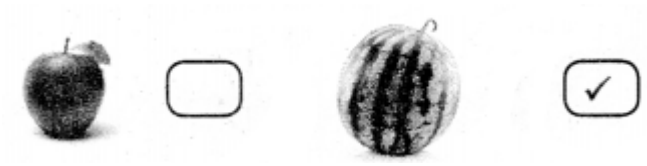
Chapter – 3

Measurements

Ex 3.1

Question 1.
Tick the object which has more volume

Answer:



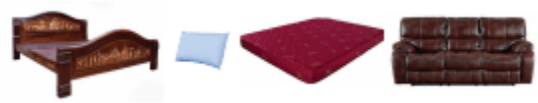
Question 2.
Arrange the given objects according to their volume
(i)

Answer:

(ii)

Answer:

(iii)



Answer:

Ex 3.2

Question 1.
Volume of regular solids such as cube and cuboid can be found by multiplying the dimensions. Complete the given table by finding the volume of the given objects.

S.No.	Objects	l	b	h	Volume (cubic cm)
1.	Note books	6 cm	15 cm	1 cm	
2.	Name board	20 cm	90 cm	2 cm	
3.	Show case cub board	70 cm	250 cm	70cm	
4.	Gift box	10 cm	10 cm	10 cm	
5.	Dice	1 cm	1 cm	1 cm	

Answer:

S.No	Objects	l	b	h	Volume (cubic cm)
1.	Note books	6 cm	15 cm	1 cm	6 × 15 × 1 = 90
2.	Name board	20 cm	90 cm	2 cm	20 × 90 × 2 = 3600
3.	Show case cub board	70 cm	250 cm	70 cm	70 × 250 × 70 = 12,25,000
4.	Gift box	10 cm	10 cm	10 cm	10 × 10 × 10 = 1000
5.	Dice	1 cm	1 cm	1 cm	1 × 1 × 1 = 1

Question 2.
Complete the given table by finding the volume of the given objects.

S.No.	Objects	l	b	h	Volume (cubic units)
1.	Brick	6 cm	8 cm	10 cm	—
2.	Windowpane	3 cm	—	45 cm	900 cubic cm
3.	Sunshade	70 cm	20 cm	—	4200 cubic cm
4.	Steps	80 cm	—	20 cm	32000 cubic cm
5.	Room	—	4 m	3 m	36 cubic m

Answer:

S.No	Objects	l	b	h	Volume (cubic cm)
1.	Brick	6 cm	8 cm	10 cm	6 × 8 × 10 = 480 cubic cm
2.	Windowpane	3 cm	$\frac{900}{3\times45}=\frac{20}{3}=6\frac{2}{3}$ cm	45 cm	900 cubic cm
3.	Sunshade	70 cm	20 cm	$\frac{^{3}\cancel{42}\,\cancel{0}\,\cancel{0}}{\cancel{7}\,\cancel{0}\times\cancel{2}\,\cancel{0}}=3$ cm	4200 cubic cm
4.	Steps	80 cm	$\frac{^{20}\cancel{32}\,\cancel{0}\,\cancel{0}\,\cancel{0}}{\cancel{8}\,\cancel{0}\times\cancel{2}\,\cancel{0}}=20$ cm	20 cm	32000 cubic cm
5.	Room	$\frac{^{3}\cancel{12}\,\cancel{36}}{\cancel{4}\times\cancel{3}}=3$m	4 m	3 m	36 cubic cm

Question 3.
Find the number of bricks of dimension 20 cm × 5 cm × 10 cm required to construct a wall of dimension 300 cm × 200 cm × 20 cm.

Answer:

$$\text{Number of bricks} = \frac{\text{Dimension of wall}}{\text{Dimension of brick}} = \frac{300\times\cancel{2}\,\cancel{0}\,\cancel{0}\times{}^{4}\cancel{20}}{\cancel{2}\,\cancel{0}\times5\times1\cancel{0}}$$

= 1200 bricks

Question 4.
How many sack of dimension 15 cm × 45 cm × 90 cm filled with rice can be kept in a room of dimension 3 m × 18 m × 9 m.

Answer:

$$\text{Number of sacks} = \frac{\text{Dimension of room}}{\text{Dimension of sacks}} = \frac{3\text{m} \times 18\text{m} \times 9\text{m}}{15\text{cm} \times 45\text{cm} \times 90\text{cm}}$$

$$= \frac{300\text{cm} \times 1800\text{cm} \times 900\text{cm}}{15\text{cm} \times 45\text{cm} \times 90\text{cm}}$$

$$= \frac{{}^{4}\cancel{20}\,\cancel{0}\,\text{cm} \times {}^{200}\cancel{18}\,\cancel{0}\,\cancel{0}\,\text{cm} \times {}^{10}\cancel{9}\,\cancel{0}\,\cancel{0}\text{cm}}{15\text{cm} \times \cancel{4}\,{}_{9}\cancel{5}\,\text{cm} \times \cancel{9}\,\cancel{0}\text{cm}} = 8000 \text{ sacks}$$

InText Questions

Activity 2 (Text Book Page N0.24)

Take some water in a beaker and mark its level.

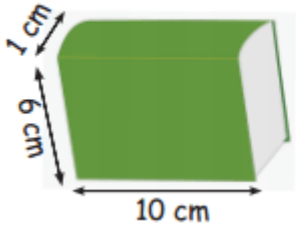
Take a solid, that is, potato and immerse it in the beaker containing water. What do you observe?

Answer:
The Water level increases

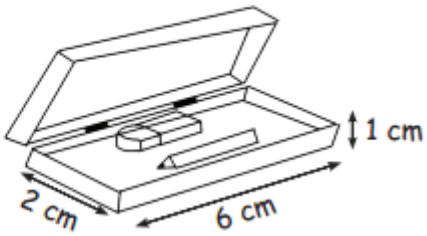
Activity 4 (Text Book Page N0.26)

We shall follow the method of unit cubes to calculate or find the volume of the objects given below. The dimensions of the objects are mentioned.

Book



Pencil box



Answer:

Volume of Book $= 10 \times 6 \times 1 = 60$ unit cubes

Volume of pencil Box $= 6 \times 2 \times 1 = 12$ unit cubes