## 21 <br> SURFACE AREAS AND VOLUMES OF SOLID FIGURES



## CHECK YOUR PROGRESS:

1. The radius and height of a right circular cylinder are $10 \frac{1}{2} \mathrm{~cm}$ and 12 cm respectively. Its curved surface area is (use $\pi=\frac{22}{7}$ ):
(A) $396 \mathrm{~cm}^{2}$
(B) $792 \mathrm{~cm}^{2}$
(C) $1188 \mathrm{~cm}^{2}$
(D) $132 \mathrm{~cm}^{2}$
2. The volume of a right circular cylinder is $4620 \mathrm{~cm}^{3}$ and its base radius is 14 cm . The curved surface area of the cylinder is (use $\pi=\frac{22}{7}$ ):
(A) $330 \mathrm{~cm}^{2}$
(B) $440 \mathrm{~cm}^{2}$
(C) $660 \mathrm{~cm}^{2}$
(D) $990 \mathrm{~cm}^{2}$
3. The base radius and height of a right circular cone are 3.5 cm and 12 cm respectively. Its curved surface area is (use $\pi=\frac{22}{7}$ ) :
(A) $550 \mathrm{~cm}^{2}$
(B) $137.5 \mathrm{~cm}^{2}$
(C) $275 \mathrm{~cm}^{2}$
(D) $12.5 \mathrm{~cm}^{2}$
4. The volume of a hemispherical bowl is $2425.5 \mathrm{~cm}^{3}$. The radius of the hemisphere is :
(A) 5.25 cm
(B) 10.5 cm
(C) 15.75 cm
(D) 12 cm
5. The surface area of a sphere is $1386 \mathrm{~cm}^{2}$. Its volume is :
(A) $9702 \mathrm{~cm}^{3}$
(B) $2425.5 \mathrm{~cm}^{3}$
(C) $441 \mathrm{~cm}^{3}$
(D) $4851 \mathrm{~cm}^{3}$
6. If the surface area of a cube is $864 \mathrm{~cm}^{2}$, find its side and volume.
7. The radius of a road roller is 42 cm and it is 1 meter long. If it takes 250 revolutions to level a playground, find the cost of levelling the ground at the rate of Rs. 5 per sq. m (use $\pi=\frac{22}{7}$ )
8. A conical tent is 3 m high and its base radius is 4 m . Find the cost of canvas required to make the tent at the rate of Rs. 50 per m$^{2}$ (use $\pi=3.14$ )
9. The diameter of a solid hemispherical toy is 35 cm , find its
(i) Curved surface area
(ii) Total surface area
(iii) Volume
10. The base radii of two right circular cylinders of the same height are in the ratio $3: 5$. Find the ratio of their volumes.

## STRETCH YOURSELF

1.. The radius and height of a closed right circular cylinder are in the ratio 5:7 and its volume is $4400 \mathrm{~cm}^{3}$. Find the radius and height of the cylinder
[use $\pi=\frac{22}{7}$ ]
2.. A metallic solid ball of diameter 28 cm is melted to form solid cylinders of base radius 7 cm and height $9 \frac{1}{3} \mathrm{~cm}$. Find the number of cylinders so formed.
3. The radii of two cylinders are in the ratio 7:6 and their heights are in the ratio $3: 4$. Find the ratio of their
(i) Volumes
(ii) Curved surface areas.

## ANSWERS

## CHECK YOUR PROGRESS :

1. B
2. C
3. B
4. B
5. D
6. Side $=12 \mathrm{~cm}$, Volume $=1728 \mathrm{~cm}^{3}$
7. Rs. 3300/- 8. Rs. 3140/-
8. Curved surface area $=1925 \mathrm{sq} \mathrm{cm}$, Total surfacearea $=2887.5 \mathrm{sq} \mathrm{cm}$, Volume $=$ $11229.17 \mathrm{~cm}^{3}$,
9. $9: 25$

STRETCH YOURSELF:

1. Radius $=10 \mathrm{~cm}$, height $=14 \mathrm{~cm}$
2. 8
3. (i) $49: 48$
(ii) $7: 8$
