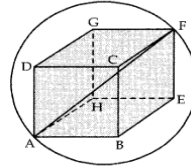


SURFACE AREAS AND VOLUME

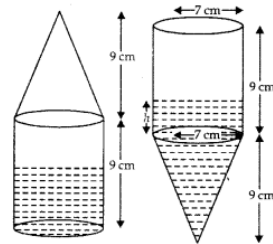
EXTRA QUESTION

1. Volume and surface area of a solid hemisphere are numerically equal. What is diameter of hemisphere?
2. If the ratio of volume of two spheres is 1: 8, then find the ratio of their surface area.
3. Find the volume and surface area of the largest cube that can be carved out of solid wooden sphere of radius $6\sqrt{3}$ cm.



4. Find the volume of the largest right circular cone that can be cut out of a cube whose edge is 8 cm.
5. A hemispherical tank of diameter 3m full of water is emptied by a pipe at the rate of $3\frac{4}{7}$ litres per second. How much time will it take to empty the tank?
6. The $\frac{3}{4}$ th part of a conical vessel of internal radius 5 cm and height 24 cm is full of water. The water is emptied into a cylindrical vessel with internal radius 10 cm. Find the height of water in cylindrical vessel.
7. The cost of painting the total outer surface of a closed cylindrical oil tank at 60 paise per sq. cm is ₹ 237.60. The height of the tank is 6 times the radius of the base of the tank. Find height and radius of the tank.
8. A sphere of diameter 12 cm, is dropped in a right circular cylindrical vessel, partly filled with water. If the sphere is completely submerged in water, the water level in the cylindrical vessel rises by $3\frac{5}{9}$ cm. Find the diameter of the cylindrical vessel.

9. A vessel in shape of an inverted cone is surmounted by a cylinder has a common radius of 7 cm. It was filled with liquid till it covered one third the height of the cylinder. If the height of each part is 9 cm and the vessel is turned upside down. Find the volume of the liquid and to what height will it reach in the cylindrical part.



10. A right circular cylinder of radius r cm and height h cm ($h > 2r$) just encloses a sphere of diameter:
 - a) r cm
 - b) $2r$ cm
 - c) h cm
 - d) $2h$ cm