

SURFACE AREA AND VOLUME

1. The floor of a rectangular hall has a perimeter of 250m. If the cost of painting the four walls at the rate of Rs.10/m² is Rs. 15000, find the height of the wall.
2. A small indoor greenhouse is made entirely of glass panes held together with tape. It is 30cm long, 25cm wide and 25cm tall.
 - a. What is the area of the glass?
 - b. How much tape is needed for all the twelve edges.
3. Curved surface area of a right circular cylinder is 4.4m². If the radius of the base of the cylinder is 0.7m, find its height.
4. Find:
 - a. The lateral or curved surface area of a closed cylindrical petrol storage tank that is 4.2m in diameter and 4.5m in height.
 - b. How much steel was actually used if 1/12th of the steel is wasted in making the tank.
5. The slant height and base diameter of a conical tomb are 25m and 14m respectively. Find the cost of whitewashing its curved surface at the cost of 210/m².
6. A corn cob, shaped like a cone, has the radius of its broadest end as 2.1cm and length as 20cm. If each 1cm² of the surface of the cob carries 4 grains, find how many grains you would find on the entire cob.
7. A hemisphere bowl made of brass has inner diameter 10.5cm. Find the cost of tin plating on the inside at the rate of 16 Rs 100cm².
8. A right circular cylinder just encloses a sphere of radius r. Find:
 - a. Surface area of sphere
 - b. Curved surface area of cylinder
 - c. Ratio of the area obtained in a and b.
9. A solid cube of side 12cm is cut into 8 cubes of equal volumes. What will be the side of the new cubes? Also, find the ratios of their surface areas.
10. A river 3m deep and 40m wide is flowing at the rate of 2km/h. How much water will fall into the sea in a minute.
11. A lead pencil consists of a cylinder of wood with a solid cylinder of graphite filled in the interior. The diameter of the pencil is 7mm, and the diameter of graphite is 1mm. If the length of the pencil is 14cm, find the volume of the wood and that of graphite.
12. A right triangle ABC with sides 3cm, 4cm, 5cm is revolved around the side 4cm. Find the volume of the solid so obtained.
13. The diameter of a metallic ball is 4.2cm. What is the mass of the ball if the density of metal is 8.9g/cm³.
14. A hemispherical tank is made up of iron sheet 1cm thick. If the inner radius is 1m, find the volume of the iron used to make the tank.