

1. The outer and inner radii of a hollow copper cylinder of height 6 cm are 11 cm and 10 cm. Find the volume of the copper used.
2. A hemispherical bowl is made of steel 1 cm thick. The inner radius of the bowl is 6 cm. Find the total surface area of the bowl, in terms of π .
3. A dome of a building is in the form of a hemisphere. From inside, it was white washed at the cost of Rs. 49,89,600. If the cost of white washing is Rs. 200 per square metre, find the inside the surface area of the dome and the volume of the air inside the dome.
4. The diameter of a roller is 120 cm long is 84 cm. If it takes 200 complete revolutions to level a playground, find the cost of levelling at the rate of Rs. 60 per square metre.
5. The radius and slant height of a cone are in the ratio 3 : 4. If its volume is 301.44 cu. cm, find its radius and slant height. (*Take* $\pi = 3.14$)
6. A wall of length 10 m was to be built across an open ground. The height of the wall is 4.8 m and thickness of the wall is 24 cm. One tenth of the wall is occupied by cement. If this wall is to be built up with bricks whose dimensions are 24 cm \times 12 cm \times 9 cm, how many bricks would be required?
7. A conical vessel whose internal radius is 5 cm and height 63 cm is full of oil. Find the volume of oil. If that oil is emptied into a cylindrical vessel with internal radius 10 cm, find the height of the oil level in the cylindrical vessel.
8. The hollow sphere, in which the circus motorcyclist performs his stunts, has a diameter of 7 m. Find the area available to the motorcyclist for riding.
9. A hemispherical dome of a building needs to be painted. If the circumference of the base of the dome is 17.6 m, find the cost of painting it, if the cost of painting is Rs. 5 per 100 cm².
10. The internal and external diameters of a hollow hemispherical vessel are 24 cm and 25 cm respectively. The cost to paint 1 sq. cm of surface is Rs. 1.75.

Find the total cost to the nearest rupee to paint the vessel all over. Ignore the area of the edge. (Take $\pi = 3.14$)

11. A rectangular piece of paper is 22 cm long and 12 cm wide. A cylinder is formed by rolling the paper along its length. Find the volume of the cylinder.

(Take $\pi = \frac{22}{7}$)

12. Twenty seven solid iron spheres, each of radius r and surface area S are melted to form a sphere with surface area S' . Find the

a. Radius r' of the new sphere.

b. Ratio of S and S'

13. Madhu has a piece of canvas, whose area is 550 m^2 . He uses it to have a conical tent made, with a base radius of 7 m. Assuming that the stitching wastage is negligible, find the volume of the tent that can be made with the canvas.