

1. The diameter of a sphere of volume $1437\frac{1}{3}$ Cu. cm is _____ cm. (Use $\pi = \frac{22}{7}$)
2. 100 jugs of equal volume full of water are emptied in a conical flask and the level of water in the flask is 75 cm. If each jug contains 3850 cm^3 of water, then find the diameter of the level of water in the flask.
3. A bucket, open at the top, is in the form of a frustum of a cone with a capacity of 12308.8 cm^3 . The radii of the top and bottom circular ends are 20 cm and 12 cm respectively. Find the height of the bucket. (Use $\pi = 3.14$)
4. A conical vessel whose internal radius is 5 cm and height 24 cm is full of water. This water is emptied in a cylindrical vessel of internal radius 10 cm. Find the height to which water level rises in the cylindrical vessel.
5. Two cones have their heights in the ratio 1:3 and radii in the ratio 3:1. What is the ratio of their volumes?
6. A cone of base radius 4 cm is divided into two parts by drawing a plane through the mid-point of its height and parallel to its base. Compare the volume of the two parts.
7. A bucket in the form of a frustum of a cone of height 30 cm with radii of its lower and upper ends as 10 cm and 20 cm respectively. Find the capacity of the bucket. Also find the total cost of milk that can completely fill the
8. A bucket in the form of a frustum of a cone of height 16 cm with radii of its lower and upper circular ends as 8 cm and 20 cm respectively. Find cost of milk which can completely fill the bucket, at the rate of ₹ 40 per litre. (Use $\pi = 3.14$)
9. The volume of a right circular cylinder with its height equal to the radius is $25\frac{1}{7} \text{ cm}^3$. Find the height of the cylinder. (Use $\pi = \frac{22}{7}$)

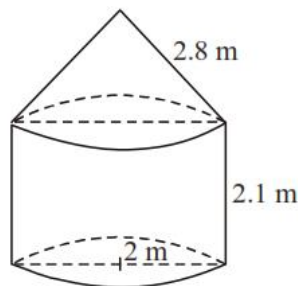
10. Find the curved surface area of the frustum of a cone, the diameters of whose circular ends are 20 m and 6 m and its height is 24 m.
11. A solid is in the shape of a cone mounted on a hemisphere of same base radius. If the curved surface areas of the hemispherical part and the conical part are equal, then find the ratio of the radius and the height of the conical part.
12. From a solid right circular cylinder of height 14 cm and base radius 6 cm, a right circular cone of same height and same base radius is removed. Find the volume of the remaining solid.
13. Water in a canal, 6 m wide and 1.5 m deep, is flowing with a speed of 10 km/h. How much area will it irrigate in 30 minutes, if 8 cm standing water is required ?
14. Two right circular cones have their heights in the ratio 1 : 3 and radii in the ratio 3 : 1, what is the ratio of their volumes?
15. 500 persons are taking dip into a cuboidal pond which is 80 m long and 50 m broad. What is the rise of water level in the pond, if the average displacement of the water by a person is 0.04 m^3 ?

16. Read the following passage and answer the questions given at the end :

Students of Class XII presented a gift to their school in the form of an electric lamp in the shape of a glass hemispherical base surmounted by a metallic cylindrical top of same radius 21 cm and height 3.5 cm. The top was silver coated and the glass surface was painted red.

- (i) What is the cost of silver coating the top at the rate of ₹ 5 per 100 cm² ?
 (ii) What is the surface area of glass to be painted red ?
17. From a solid cylinder whose height is 2.4 cm and diameter 1.4 cm, a conical cavity of same height and same diameter is hollowed out.
- Find the total surface area of the remaining solid. $\left[\text{Use } \pi = \frac{22}{7} \right]$
18. How many cubes of side 2 cm can be made from a solid cube of side 10 cm?
19. A hemispherical depression is cut out from one face of a cuboidal block of side 7 cm such that the diameter of the hemisphere is equal to the edge of the cube. Find the surface area of the remaining solid.

20. In Figure-6, a tent is in the shape of a cylinder surmounted by a conical top. The cylindrical part is 2.1 m high and conical part has slant height 2.8 m. Both the parts have same radius 2 m. Find the area of the canvas used to make the tent. (Use $\pi = \frac{22}{7}$)



21. **A bucket open at the top has top and bottom radii of circular ends as 40 cm and 20 cm respectively. Find the volume of the bucket if its depth is 21 cm. Also find the area of the tin sheet required for making the bucket. (Use $\pi = \frac{22}{7}$)**
22. 2 cubes, each of volume 125 cm^3 , are joined end to end. Find the surface area of the resulting cuboid.
23. A solid toy in the form of a hemisphere surmounted by a right circular cone of same radius. The height of the cone is 10 cm and the radius of its base is 7 cm. Determine the volume of the toy. Also find the area of the colored sheet required to cover the toy.
(Use $\pi = \frac{22}{7}$ and $\sqrt{149} = 12.2$)
24. A cone and a cylinder have the same radii but the height of the cone is 3 times that of the cylinder. Find the ratio of their volumes.
25. In a cylindrical vessel of radius 10 cm, containing some water, 9000 small spherical balls are dropped which are completely immersed in water which raises the water level. If each spherical ball is of radius 0.5 cm, then find the rise in the level of water in the vessel.
26. **A spherical metal ball of radius 8 cm is melted to make 8 smaller identical balls. The radius of each new ball is _____ cm.**
28. A solid iron cuboidal block of dimensions $4.4 \text{ m} \times 2.6 \text{ m} \times 1 \text{ m}$ is cast into a hollow cylindrical pipe of internal radius 30 cm and thickness 5 cm. Find the length of the pipe.

29. A solid is in the shape of a hemisphere surmounted by a cone. If the radius of hemisphere and base radius of cone is 7 cm and height of cone is 3.5 cm, find the volume of the solid.

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

30. Isha is 10 years old girl. On the result day, Isha and her father Suresh were very happy as she got first position in the class. While coming back to their home, Isha asked for a treat from her father as a reward for her success. They went to a juice shop and asked for two glasses of juice. Aisha, a juice seller, was serving juice to her customers in two types of glasses. Both the glasses had inner radius 3cm. The height of both the glasses was 10cm.



First type: A Glass with hemispherical raised bottom.



Second type: A glass with conical raised bottom of height 1.5 cm.

Isha insisted to have the juice in first type of glass and her father decided to have the juice in second type of glass. Out of the two, Isha or her father Suresh, who got more quantity of juice to drink and by how much?

31. A petrol tank is in the form of a frustum of a cone of height 20 m with diameters of its lower and upper ends as 20 m and 50 m respectively. Find the cost of petrol which can fill the tank completely at the rate of Rs. 70 per litre. Also find the surface area of the tank.
32. Water is flowing at the rate of 15km/hour through a pipe of diameter 14cm into a cuboidal pond which is 50m long and 44m wide. In what time will the level of water in the pond rise by 21cm?