

SURFACE AREA AND VOLUME

1. Ram got a playing top which is shaped like cone surmounted by a hemisphere. The entire top is 5cm in height and diameter of the top is 3.5cm. Find the surface area.
2. The decorative block is made up of two solids- a cube and a hemisphere. The base of the block is a cube with edge 5cm and hemisphere fixed on top has diameter of 4.2cm. Find the total surface area of the block.
3. If the base of the shed is of diameter $7 \times 15 \times 8$, find the volume of air that the shed can hold. Furthermore, suppose the machinery in the shed occupies a total space of 300m^3 and there are 20 workers, each of whom occupy about 0.08m^3 space on an average. How much air is in the shed?
4. A solid toy is in the form of a hemisphere surmounted by a right circular cone. The height of the cone is 2cm and the diameter of the base is 4cm. Determine the volume of the toy.
5. A copper rod of diameter 1cm and length 8cm is drawn into a wire of length 18m of uniform thickness. Find the thickness of the wire.
6. A well of diameter 3m is dug 14m deep. The earth taken out of it has been spread evenly all around it in the shape of a circular ring of width 4m to form an embankment. Find the height of the embankment.
7. A farmer connects a pipe of internal diameter 20cm from a canal into a cylindrical tank in her field, which is 10m in diameter and 2m deep. If water flows through the pipe at the rate of 3km/h. In how much time will the tank be filled?
8. The radii of the ends of a frustum of a cone 45cm high and 20cm and 7cm. Find the volume, curved surface area.
9. A metallic right circular cone 20cm high, whose vertical angle is 60° , is divided into two parts by a plane parallel to its base, going through the midpoint of its height. Find the length of the wire of diameter one-sixteenth cm made using the frustum obtained above.
10. A right-angled triangle of base and height 3cm and 4cm is made to revolve around its hypotenuse. Find the volume and surface area of the double cone so formed.