



MATHEMATICS CH:13 SURFACE AREA & VOLUME

Name: _____

Date: _____

Class: X Sec: ____

1.	A tent is in the shape of a right circular cylinder surmounted by a cone. The total height and the diameter of the base are 13.5 m and 28 m. If the height of the cylindrical portion is 3 m, find the total surface area of the tent.
2.	A field is 150 m long and 100 m broad. A tank 32 m long, 25 m broad and 10 meter deep is dug in the field, and the earth taken out of it is spread evenly over the remaining part of the field. How much is the level of field raised?
3.	Water flows through a cylindrical pipe of internal radius 3.5 cm at 5 m per sec. calculate the volume of water in litres discharged by the pipe in one minute
4.	A bucket open at the top is in form of a frustum of a cone. The depth of bucket is 20 cm and diameter of its two ends is 24 cm and 12 cm respectively. What is the cost of metal sheet used at the rate of Rs. 20 per 100 cm ² .
5.	The rain water collected on the roof of a building of dimensions 44 m × 10 m, is drained into a cylindrical vessel having base diameter 4 m and height 7 m. If the vessel is full up to the brim, find the height of rain water on the roof. (use $\pi = \frac{22}{7}$)
6.	The height of a cone is 42 cm. A small cone is cut off at the top by a plane parallel to the base. If its volume is 1/64 of the volume of the given cone, find the height at which the section is made.
7.	The diameter of a solid hemisphere is 42 cm. Find its volume, curved surface area and total surface area
8.	<p>A conical vessel of ratio 12 cm and height 16 cm completely filled with water. A sphere is lowered into the water & its size is such that it touches the sides, as shown in figure. Find the fraction of water that overflows.</p> <p>The diagram shows a conical vessel with vertex C and top edge AB. The height of the vessel is 16 cm. The radius of the top of the vessel is 12 cm. A sphere of radius r is shown inside the vessel, touching the sides at points M and N. The center of the sphere is O. The angle at the vertex C is theta. The top of the vessel is labeled A and B, and the center of the top is O'.</p>



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