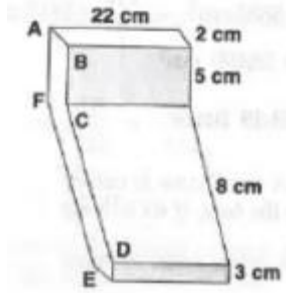
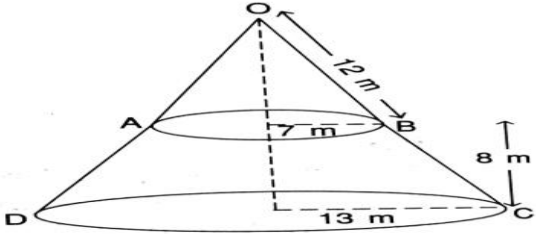


Mathematics Assignment (Class-X)

Chapter-13 Surface Areas and Volumes

	1 MARKER QUESTIONS
1	A cylinder and a cone are of the same base radius and same height. Find the ratio of the volumes of the cylinder of that of the cone. a) 1 : 3 b) 1 : 2 c) 3 : 1 d) 2 : 1
2	In the figure, the shape of a solid copper piece (made of two pieces) with dimensions as shown. The face ABCDEFA has uniform cross section. Assume that the angles at A, B, C, D, E and F are right angles. Calculate the volume of the piece.  a) 840 cm ³ b) 880 cm ³ c) 876 cm ³ d) 890 cm ³
3	A toy is in the form of a cone mounted on a hemisphere of common base radius 7 cm. The total height of the toy is 31 cm. Find the total surface area of the toy. a) 465 cm ² b) 912 cm ² c) 769 cm ² d) 858 cm ²
4	A metallic sphere of radius 4.2 cm is melted and recast into the shape of a cylinder of radius 6 cm. Then, the height of the cylinder will be equal to _____.
5	The surface area of a sphere is 616 cm ² . Its diameter is _____ and volume is _____.
6	If two identical solid cubes of side "x" are joined end to end, then the total surface area of the resulting cuboid is 12x ² . Is it true?
7	A spherical ball is melted to make eight new identical balls. Then the radius of each new ball is one-eighths of the radius of the original ball. Is it true?
	2 MARKER QUESTIONS
8	The largest sphere is carved out of a cube of side 7 cm. Find the volume of the sphere.
9	The diameter of a sphere is 28 cm. Find the cost of painting it all around at Rs. 0.10 per square cm.
10	The perimeter of one face of a wooden cube is 20 cm. Find its weight if 1 cm ³ of wood weighs 8.25 g.
11	The radii of two cylinders are in the ratio of 1 : $\sqrt{3}$. If the volumes of two cylinders be same, find the ratio of their respective heights.
12	If the radius of the base of a cone is doubled keeping the height same. What is the ratio of the volume of the larger cone to the smaller cone?

13	If the length, breadth and height of a solid cube are in the ratio 4 : 3 : 2 and total surface area is 832 cm ² . Find its volume.
	3 MARKER QUESTIONS
14	From a cubical block of wood with a square base of side 30 cm and of height 70 cm, a circular cylindrical hole of the biggest size is drilled. Find the volume of the wood left in the block.
15	A toy is in the form of a cone mounted on a hemisphere of common base radius 7cm. The total height of the toy is 31 cm. Find the total surface area of the toy.
16	The radii of the circular ends of a conical bucket which is 45 cm high are 28 cm and 7 cm, find the capacity of the bucket.
17	The radius of a cone is 10 cm. A sphere has the same radius and volume as the cone. Find the curved surface area of the cone correct to one place of decimal.
18	A copper rod of diameter 1 cm and length 8 cm is drawn into a wire of length 18 m of uniform thickness. Find the thickness of the wire.
19	The radius of the base and the height of a solid right circular cylinder are in the ratio 2 : 3 and its volume is 1617 cu cm. Find the total surface area of the cylinder.
20	A hemispherical bowl of internal diameter 36 cm contains a liquid. This liquid is to be filled in cylindrical bottles of radius 3 cm and height 6 cm. how many bottles are required to empty the bowl?
21	A bucket made up of a metal sheet is in the form of frustum of a cone. Its depth is 24 cm and the diameters of the top and the bottom are 30 cm and 10 cm respectively. Find the cost of milk which can completely fill the bucket at the rate of Rs 20 per liter and the cost of the metal sheet used, if it costs Rs 10 per 100 cm ² . (Take $\pi = 3.14$)
22	A hemispherical tank full of water is emptied by a pipe at the rate of $3\frac{4}{7}$ liters per second. How much time will it take to empty half the tank, if it is 3 m in diameter?
	4 MARKER QUESTIONS
23	A sphere of diameter 6 cm is dropped in a right circular cylindrical vessel partly filled with water. The diameter of the cylindrical vessel is 12 cm. If the sphere is completely submerged in water, by how much will the level of water rise in the cylindrical vessel?
24	A decorative block is made up of two solids- a cube and an inverted hemisphere. The base of the block is a cube with edge 5 cm, and a hemisphere fixed on the top has a diameter 4.2 cm. Find the total surface area of the block.
25	The radii of the ends of frustum of a right circular cone are 5 meters and 8 meters and its lateral height is 5 m. Find the lateral surface area and the volume of the frustum. (Take $\pi = 3.142$).
26	Water flows at the rate of 10 m per minute through a cylindrical pipe having its diameter as 5 mm. How much time will it take to fill a conical vessel whose diameter of the base is 40 cm and the depth is 24 cm?

27	A hollow copper ball has an external diameter of 12 cm, and a thickness of 0.1 cm. Find: (a) the outer surface area of the ball. (b) the weight of the ball if 1 cm^3 of copper weights 8.8 g. (Take $\pi = 3.14$)
28	The rain water from a roof 22 m by 20 m drains into a cylindrical vessel having diameter of base 2 m and height 3.5 m. If the vessel is just full, find the rainfall in cm.
29	A tent consists of a frustum of a cone, surmounted by a cone. If the diameters of the upper and lower circular ends of the frustum be 14m and 26m respectively, the height of the frustum be 8m and the slant height of the surmounted conical portion be 12 m, find the area of canvas required to make tent . (Assume that the radii of the upper circular end of the frustum and the base of surmounted conical portion are equal).
	
30	Water is flowing at the rate of 2.52 km/h through a cylindrical pipe into a cylindrical tank, the radius of whose base is 40 cm. If the increase in the level of water in the tank in half an hour is 3.15 m, find the internal diameter of the pipe.
31	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 of standing water is needed?
	HOTS
32	Two right circular cones X and Y are made, X having three times the radius of Y and Y having half the volume of X. Calculate the ratio of heights of X and Y.
33	A copper wire, 3 mm in diameter, is wound about cylinder whose length is 12 cm and diameter 10 cm so as to cover the curved surface of the cylinder. Find the length and mass of the wire, assuming that the density of copper to be 8.88 g per cm^3 .
34	A right-angled triangle, whose sides are 3 cm and 4 cm, is made to revolved about its hypotenuse. Find the volume and surface area of the double cone so formed. (Take $\pi = 3.14$)
35	The interior of a building is in the form of a right circular cylinder of radius 7 m and height 6 m surmounted by a right circular cone of vertical angle 60° . Find the cost of painting the building from inside at the rate of Rs 30 per m^2 .
36	A solid sphere of radius 6 cm is melted into a hollow cylinder of uniform thickness. If the external radius of the base of the cylinder is 5 cm and height is 32 cm, find the uniform thickness of the cylinder.