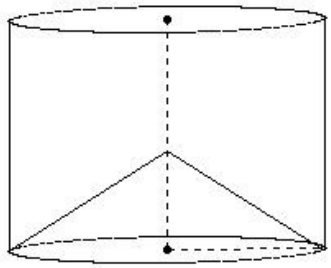
EduSahara™ Assignment

Name : Volume of a Combination of Solids

Chapter : Surface Areas and Volumes

Grade : CBSE Grade X

1. From a solid cylinder of height 14.00 cm and base radius 9.50 cm, a conical cavity of height 6.00 cm and base radius 9.50 cm is drilled out. Find the volume of the resulting solid

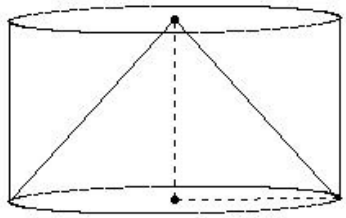


(i) 3403.71 cu.cm (ii) 3163.71 cu.cm (iii) 3573.71 cu.cm (iv) 3653.71 cu.cm (v) 3383.71 cu.cm

2. A conical vessel, whose internal radius is 15.00 cm and height 21.00 cm, is full of liquid . Its contents are emptied into a cylindrical vessel with internal radius 12.00 cm. Find the height to which the liquid rises in the cylindrical vessel.

(i) 5.94 cm (ii) 7.94 cm (iii) 13.94 cm (iv) 10.94 cm (v) 15.94 cm

3. From a circular cylinder of diameter 20.00 cm and height 11.00 cm, a conical cavity of the same base radius and of the same height is hollowed out. Find the volume of the remaining solid.



(i) 2124.76 cu.cm (ii) 2524.76 cu.cm (iii) 2044.76 cu.cm (iv) 2474.76 cu.cm (v) 2304.76 cu.cm

4. A cone of maximum volume is carved out of a cube of edge 19.00 cm. Find the volume of the remaining material after the cone is carved out

(i) 5062.60 cu.cm (ii) 4942.60 cu.cm (iii) 4912.60 cu.cm (iv) 5132.60 cu.cm (v) 5182.60 cu.cm

5. A cone of maximum volume is carved out of a cuboid of dimensions 18.00 cm×18.00 cm×24.00 cm. Find the volume of the remaining material after the cone is carved out

(i) 5909.43 cu.cm (ii) 5889.43 cu.cm (iii) 5739.43 cu.cm (iv) 5579.43 cu.cm (v) 5609.43 cu.cm

6. An open cylindrical vessel of internal diameter 29.00 cm and height 24.00 cm stands on a horizontal table. Inside this is placed a solid metallic right circular cone, the diameter of whose base is 14.50 cm and height 24.00 cm and filled with water. If the cone is replaced by another cone whose height is 12.00 cm and base radius is 4.35 cm, find the drop in the water level.

(i) 0.64 cm (ii) 1.64 cm (iii) 9.64 cm (iv) 3.64 cm (v) 2.64 cm

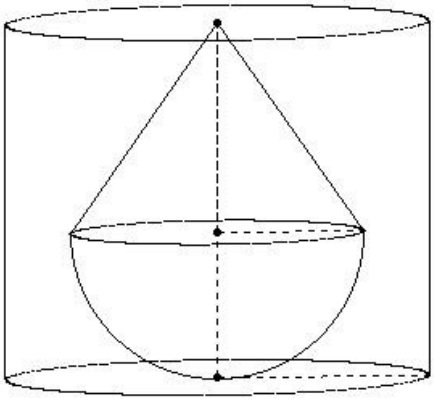
7. A cylindrical vessel of base radius 17.00 cm contains water . A solid sphere of radius 7.00 cm is immersed completely in the water. Find the rise in the water level in the vessel

(i) 9.58 cm (ii) 1.58 cm (iii) 0.58 cm (iv) 2.58 cm (v) 3.58 cm

8. Marbles of diameter 1.80 cm are dropped into a cylindrical beaker containing some water. When they are fully submerged, the water level rises by 14.4 cm. If the diameter of the beaker is 14.40 cm, find the number of marbles that are dropped in it

(i) 776 (ii) 765 (iii) 792 (iv) 768 (v) 753

9. A solid consisting of a right circular cone, standing on a hemisphere is placed upright, in a right circular cylinder full of water and touches the bottom. The radius of the cylinder is 13.00 cm and height is 22.00 cm. The radius of the hemisphere is 9.00 cm and the height of the cone is 13.00 cm. Find the volume of water left in the cylinder.



(i) 9054.57 cu.cm (ii) 8994.57 cu.cm (iii) 9224.57 cu.cm (iv) 8794.57 cu.cm (v) 9304.57 cu.cm

10. A conical vessel of radius 3.00 cm and height 4.00 cm is completely filled with water. A sphere is lowered into the water and its size is such that when it touches the sides, it is just immersed. Find the fraction of the water that overflows

(i) $\frac{5}{8}$ (ii) $\frac{1}{8}$ (iii) $\frac{3}{8}$ (iv) $\frac{3}{10}$ (v) $\frac{1}{2}$

11. A well of diameter 12.00 m is dug to a depth of 14.00 m and the soil from digging is evenly spread out to form a platform of base dimensions 24.00 m×17.00 m . Find the height of the platform

(i) 5.88 m (ii) 4.88 m (iii) 1.88 m (iv) 2.88 m (v) 3.88 m

12. A well of diameter 13.00 m is dug to a depth of 17.00 m . The soil taken out of it has been spread evenly all around it in the shape of a circular ring of width 3m to form an embankment. Find the height of the embankment.

(i) 11.96 m (ii) 9.96 m (iii) 19.96 m (iv) 14.96 m (v) 17.96 m

13. An ice cream container has the shape of a right circular cylinder having inner diameter 30.00 cm and height 33.00 cm . The ice cream is filled into cones of diameter 18.00 cm and height 14.00 cm , having a hemispherical shape on the top. Find the number of such complete cones which can be filled with ice cream

(i) 9 (ii) 6 (iii) 10 (iv) 7 (v) 8

14. Water in a canal, 16 m wide and 4 m deep is flowing with a speed of 5 kmph . How much area will it irrigate in 5 min, if 8 cm of standing water is needed ?

(i) 315333.33 sq.m (ii) 358333.33 sq.m (iii) 350333.33 sq.m (iv) 317333.33 sq.m (v) 333333.33 sq.m

15. A farmer connects a pipe of internal diameter 20 cm from a canal into a cylindrical tank in his field, which is 10 m in diameter and 2 m deep.
If water flows through the pipe at the rate of $\frac{50}{7}$ kmph , in how much time will the tank be filled ?

(i) 45.00 min (ii) 37.00 min (iii) 42.00 min (iv) 47.00 min (v) 39.00 min

Assignment Key

1) (i)	2) (iv)	3) (v)	4) (i)	5) (iii)	6) (ii)
7) (ii)	8) (iv)	9) (i)	10) (iii)	11) (v)	12) (iv)
13) (v)	14) (v)	15) (iii)			