EduSahara™ Assignment

Name : Conversion of Solid from One Shape to Another

Chapter : Cone and Sphere

Grade : ICSE Grade X

1. The height of a right circular cone is 12.00 cm and the radius of its base is 12.50 cm. It is melted and recast into a right circular cone with base radius 8.75 cm. Find the new height

(i) 19.49 cm (ii) 24.49 cm (iii) 21.49 cm (iv) 27.49 cm (v) 29.49 cm

2. A solid metallic cylinder of base radius 8.50 cm and height 23.00 cm is melted to form cones each of height 1.00 cm and radius 1.00 cm . Find the number of complete cones formed

(i) 4985 (ii) 4815 (iii) 4845 (iv) 5035 (v) 5105

3. A conical vessel, whose internal radius is 4.50 cm and height 5.00 cm, is full of liquid . Its contents are emptied into a cylindrical vessel with internal radius 3.00 cm. Find the height to which the liquid rises in the cylindrical vessel.

(i) 4.75 cm (ii) 2.75 cm (iii) 3.75 cm (iv) 1.75 cm (v) 5.75 cm

4. A hollow metallic cylindrical tube has an internal radius of 9.00 cm and height 25.00 cm. The thickness of the metal is 4.5 cm .The tube is melted to cast into a right circular cone of height 7.00 cm. Find the radius of the cone.

(i) 32.94 cm (ii) 29.94 cm (iii) 37.94 cm (iv) 27.94 cm (v) 35.94 cm

5. An open cylindrical vessel of internal diameter 15.00 cm and height 10.00 cm stands on a horizontal table. Inside this is placed a solid metallic right circular cone, the diameter of whose base is 7.50 cm and height 10.00 cm and filled with water. If the cone is replaced by another cone whose height is 4.00 cm and base radius is 1.50 cm, find the drop in the water level.

(i) 8.78 cm (ii) 7.78 cm (iii) 2.78 cm (iv) 1.78 cm (v) 0.78 cm

6. The surface area of a solid metallic sphere is 9164.57 sq.cm. It is melted and recasted into solid right circular cones of radius 13.50 cm and height 10.80 cm . Find the number of complete cones that can be made

(i) 43 (ii) 45 (iii) 37 (iv) 40 (v) 35

7. A hollow sphere of internal and external diameters 38.00 cm and 40.00 cm respectively is melted into a cone of base diameter 22.00 cm. Find the height of the cone

(i) 42.72 cm (ii) 34.72 cm (iii) 32.72 cm (iv) 37.72 cm (v) 40.72 cm

8. A cylindrical vessel of base radius 27.00 cm contains water . A solid sphere of radius 18.00 cm is immersed completely in the water. Find the rise in the water level in the vessel

(i) 13.67 cm (ii) 15.67 cm (iii) 5.67 cm (iv) 7.67 cm (v) 10.67 cm

9. Marbles of diameter 1.20 cm are dropped into a cylindrical beaker containing some water. When they are fully submerged, the water level rises by 9.6 cm. If the diameter of the beaker is 16.80 cm, find the number of marbles that are dropped in it

(i) 2312 (ii) 2202 (iii) 2622 (iv) 2352 (v) 2422

10. A metallic sphere of radius 14.00 cm is melted to recast into the shape of a cylinder of radius 19.00 cm . Find the height of the cylinder.

(i) 5.13 cm (ii) 10.13 cm (iii) 15.13 cm (iv) 7.13 cm (v) 13.13 cm

11. Metallic spheres of radii 4.00 cm, 13.00 cm are melted to form a single solid sphere. Find the radius of the resulting sphere.

(i) $\sqrt[3]{2261}$ cm (ii) $\sqrt[5]{2261}$ cm (iii) 2261 cm (iv) $\sqrt[3]{2259}$ cm (v) $\sqrt[3]{2264}$ cm

12. A well of diameter 13.00 m is dug to a depth of 11.00 m and the soil from digging is evenly spread out to form a platform of base dimensions 19.00 m×20.00 m . Find the height of the platform

(i) 5.84 m (ii) 3.84 m (iii) 1.84 m (iv) 2.84 m (v) 4.84 m

13. A well of diameter 18.00 m is dug to a depth of 12.00 m . The soil taken out of it has been spread evenly all around it in the shape of a circular ring of width 6m to form an embankment. Find the height of the embankment.

(i) 7.75 m (ii) 8.75 m (iii) 4.75 m (iv) 6.75 m (v) 5.75 m

14. An ice cream container has the shape of a right circular cylinder having inner diameter 36.00 cm and height 42.00 cm . The ice cream is filled into cones of diameter 11.00 cm and height 19.00 cm , having a hemispherical shape on the top. Find the number of such complete cones which can be filled with ice cream

(i) 49 (ii) 44 (iii) 39 (iv) 41 (v) 47

15. A cylinder with radius 9.00 cm and height 9.00 cm is melted to recast into a cone of height 87.48 cm. Find the radius of the cone.

(i) 3.00 cm (ii) 7.00 cm (iii) 4.00 cm (iv) 5.00 cm (v) 6.00 cm

16. A copper sphere having a radius of 7.00 cm is melted and drawn into a cylindrical wire of radius 0.70 cm. Calculate the length of the wire.

(i) 10.33 m (ii) 11.33 m (iii) 8.33 m (iv) 9.33 m (v) 7.33 m

17. A copper rod of diameter 1.80 cm and length 6.00 cm is drawn into a wire of length 121.50 m of uniform thickness. Find the thickness of the wire.

(i) $\frac{2}{25}$ cm (ii) 0 cm (iii) $\frac{1}{25}$ cm (iv) $\frac{3}{50}$ cm (v) $\frac{1}{50}$ cm

18. Water in a canal, 14 m wide and 5 m deep is flowing with a speed of 6 kmph . How much area will it irrigate in 45 min, if 10 cm of standing water is needed ?

(i) 3400000.00 sq.m (ii) 3010000.00 sq.m (iii) 3180000.00 sq.m (iv) 3150000.00 sq.m

19. A farmer connects a pipe of internal diameter 16 cm
from a canal into a cylindrical tank in his field,
which is 4 m in diameter and 4 m deep.
If water flows through the pipe at the rate of $\frac{25}{2}$ kmph ,
in how much time will the tank be filled ?

(i) 15.00 min (ii) 17.00 min (iii) 7.00 min (iv) 12.00 min (v) 9.00 min

Assignment Key

1) (ii)	2) (i)	3) (iii)	4) (i)	5) (v)	6) (iv)
7) (iv)	8) (v)	9) (iv)	10) (ii)	11) (i)	12) (ii)
13) (iv)	14) (ii)	15) (iv)	16) (iv)	17) (v)	18) (iv)
19) (iv)					