MENSURATION

1. Right Circular Cylinder

    (a) CSA (Or) LSA $= 2\,\pi\,r\,h$ sq. units

    (b) TSA $= 2\,\pi\,r(\,h+r)$ sq. units

2. We always consider $\pi = \dfrac{22}{7}$, unless otherwise stated.

3. The term "surface area:" refers to TSA

4. Hollow Cylinder

      TSA $= 2\,\pi\,(R+r)(\,R-r+h)$ sq. units

5. Right Circular Cone

      (a) CSA (Or) LSA $= \pi\,r\,l$ sq. units

      (b) TSA $= \pi\,r(\,l+r)$ sq. units

      (c) $l = \sqrt{h^2 + r^2}$

      (d) $h = \sqrt{l^2 - r^2}$

      (e) $r = \sqrt{l^2 - h^2}$

6. Sphere

      Surface area $= 4\,\pi\,r^2$ sq. units

7. Hemi Sphere

      (i) CSA (Or) LSA $= 2\,\pi\,r^2$ sq. units

     (ii) TSA $= 3\,\pi\,r^2$ sq. units

8. Hollow Hemi sphere

      (i) CSA (Or) LSA $= 2\,\pi\,(R^2 + r^2)$ sq. units

     (ii) TSA $= \pi\,(3R^2 + r^2)$ sq. units

9. Frustum

      (i) CSA (Or) LSA $= \pi\,(R+r)\,l$ sq. units

$$l = \sqrt{h^2 + (R-r)^2}$$

     (ii) TSA $= \pi\,(R+r)l + \pi R^2 + \pi\,r^2$ sq. units

10. Volume of a solid right circular cylinder $= \pi\,r^2\,h$ cu. units

11. Volume of a hollow cylinder $= \pi(R^2 - r^2)\,h$ cu. units

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12. Volume of a right circular cone $= \frac{1}{3}\pi r^2 h$ cu. units

13. Volume of a sphere $= \frac{4}{3}\pi r^3$ cu. units

14. Volume of a hollow sphere/spherical shell $= \frac{4}{3}\pi(R^3 - r^3)$ cu. units

15. Volume of a solid hemi sphere $= \frac{2}{3}\pi r^3$ cu. units

16. Volume of a hollow hemi sphere/spherical shell $= \frac{2}{3}\pi(R^3 - r^3)$ cu. units

17. Volume of a frustum $= \frac{\pi h}{3}(R^2 + R r + r^2)$ cu. units

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