Volume & Surface Area

CUBOID

1. Let length = l, breadth = b and height = h units. Then
    1. **Volume** = (l x b x h) cubic units.
    2. **Surface area** = 2(lb + bh + lh) sq. units.
    3. **Diagonal** =(l^2 + b^2 + h^2)½ units.

CUBE

2. Let each edge of a cube be of length a. Then,
    1. **Volume** = a^3 cubic units.
    2. **Surface area** = $6a^2$ sq. units.
    3. **Diagonal** = (3)½ a units.

CYLINDER

3. Let radius of base = r and Height (or length) = h. Then,
    1. **Volume** = ($\pi r^2 h$) cubic units.
    2. **Curved surface area** = ($2\pi rh$) sq. units.
    3. **Total surface area** = $2\pi r(h + r)$ sq. units.

CONE

4. Let radius of base = r and Height = h. Then,
    1. **Slant height,** l = (h^2 + r^2)½ units.
    2. **Volume** = $\left(\frac{1}{3}\pi r^2 h\right)$ cubic units.
    3. **Curved surface area** = (πrl) sq. units.
    4. **Total surface area** = (πrl + πr^2) sq. units.

SPHERE

5. Let the radius of the sphere be r. Then,
    1. **Volume** = $\left(\frac{4}{3}\pi r^3\right)$ cubic units.
    2. **Surface area** = ($4\pi r^2$) sq. units.

HEMISPHERE

6. Let the radius of a hemisphere be r. Then,
    1. **Volume** = $\left(\frac{2}{3}\pi r^3\right)$ cubic units.
    2. **Curved surface area** = ($2\pi r^2$) sq. units.
    3. **Total surface area** = ($3\pi r^2$) sq. units.

Note: 1 litre = 1000 cm^3.