

SURFACE AREA & VOLUME

Cuboid

Cube

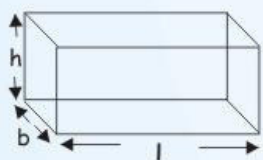
Cone

Cylinder

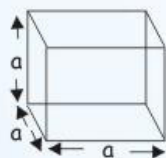
Sphere

Hemisphere

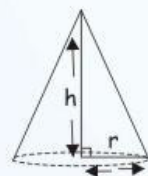
Frustum of a Cone



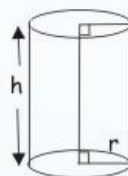
1. T.S.A $\rightarrow 2[lb + bh + hl]$
2. C.S.A $\rightarrow 2[bh + hl]$
3. Volume $\rightarrow l \times b \times h$
4. Diagonal $\rightarrow \sqrt{l^2 + b^2 + h^2}$



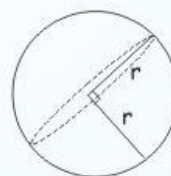
1. T.S.A $\rightarrow 6a^2$
2. C.S.A $\rightarrow 4a^2$
3. Volume $\rightarrow a^3$
4. Diagonal $\rightarrow \sqrt{3}a$



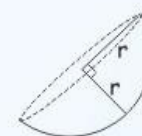
1. T.S.A $\rightarrow \pi r(\ell + r)$
2. C.S.A $\rightarrow \pi r\ell$
3. Volume $\rightarrow \frac{1}{3}\pi r^2 h$



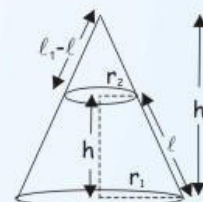
1. T.S.A $\rightarrow 2\pi r(r + h)$
2. C.S.A $\rightarrow 2\pi rh$
3. Volume $\rightarrow \pi r^2 h$



1. C.S.A = T.S.A. $= 4\pi r^2$
2. Volume $= \frac{4}{3}\pi r^3$



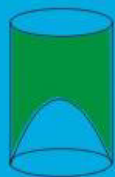
1. C.S.A $= 2\pi r^2$
2. T.S.A. $= 3\pi r^2$
3. Volume $= \frac{2}{3}\pi r^3$



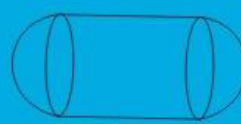
1. C.S.A $= \pi r_1 \ell_1 - \pi r_2(\ell_1 - \ell)$
2. T.S.A. $= \pi \ell(r_1 + r_2) + \pi(r_1^2 + r_2^2)$
3. Volume $= \frac{1}{3}\pi h(r_1^2 + r_2^2 + r_1 r_2)$
4. Slant height $= \sqrt{h^2 + (r_1 - r_2)^2}$

NOTE :

1. C.S.A. $\rightarrow$ Curved surface area
2. T.S.A. $\rightarrow$ Total surface area
3. l $\rightarrow$ Length
4. b $\rightarrow$ Breadth
5. h $\rightarrow$ Height
6. ℓ $\rightarrow$ Slant height
7. r $\rightarrow$ Radius
8. a $\rightarrow$ Side of cube



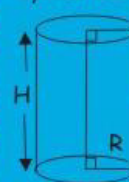
Volume = Volume of cylinder
- Volume of hemisphere



Total surface area =
C.S.A. of 2 hemispheres +
C.S.A of cylinder

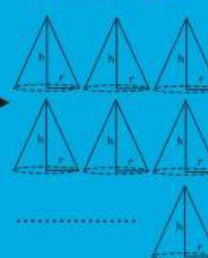
Conversion of Solids

Cylindrical Vessel



By melting

n Conical Vessel



Volume of cylindrical vessel = n volume of 1 conical vessel

$$\pi R^2 H = n \times \frac{1}{3} \pi r^2 h$$