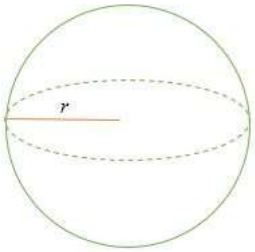
Sphere Formula

1. Sphere

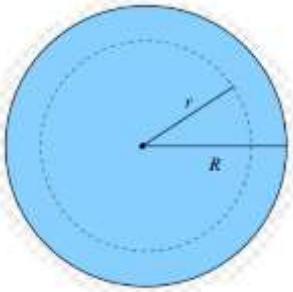
Radius= r



- Surface area = $4\pi r^2$ sq. unit
- Volume = $\frac{4}{3}\pi r^3$ cube unit

2. Spherical Shells

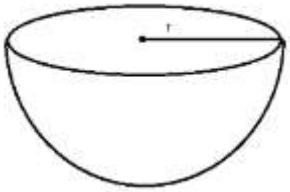
If outer Radius = R
Inner Radius= r



- Thickness = R-r
- Outer Carved Surface Area= $4\pi R^2$ Sq. Unit
- Inner Carved Surface Area= $4\pi r^2$ Sq. Unit
- Volume= $\frac{4}{3}\pi$ (R^3-r^3) cube unit

3. Hemisphere

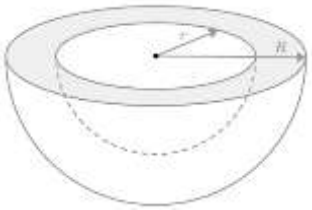
Radius= r



- Curved Surface Area= $2\pi r^2$ Sq. Unit
- Total Surface Area= $3\pi r^2$ Sq. Unit
- Volume= $\frac{2}{3}\pi r^3$ cube unit

4. Hemispherical Shell

If outer Radius = R
Inner Radius= r



- Thickness = R-r
- Outer Carved Surface Area= $4\pi R^2$ Sq. Unit
- Inner Carved Surface Area= $4\pi r^2$ Sq. Unit
- Total Surface Area = π ($3R^2$+r^2) Sq. Unit
- Volume = $\frac{2}{3}\pi$ (R^3-r^3) cube unit