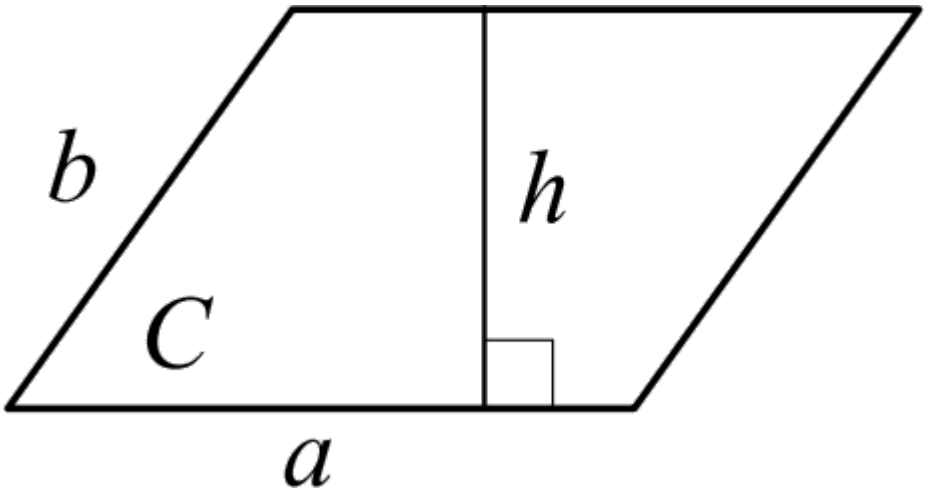
Surface, Area and Volumes Formulae for Competitive Exams

Length and area

Parallelogram:

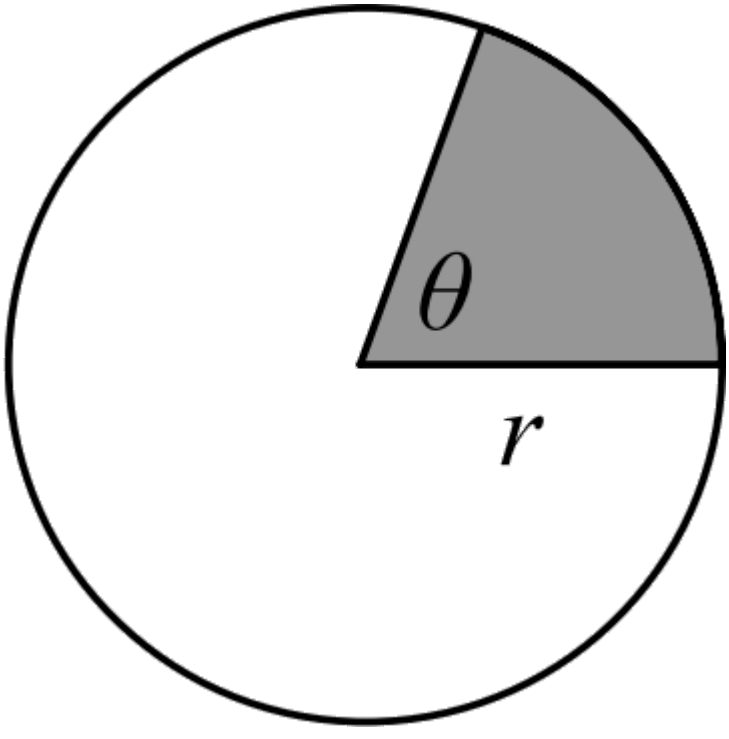


Parallelogram

$$Perimeter = 2a + 2b$$

$$Area = a \times h = a \times b \times \sin \quad C$$

Are/Sector:



Are/Sector

When θ is in radians:

$$Length\ of\ arc = r \times \theta$$

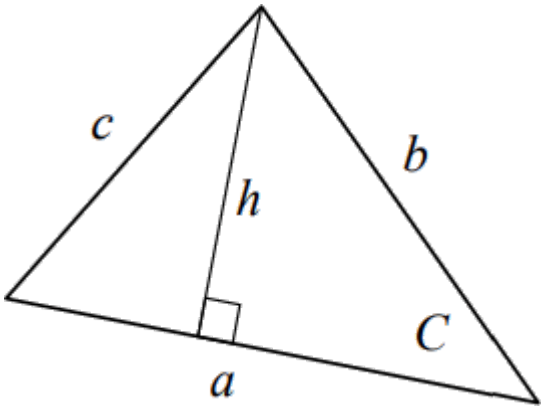
$$Area\ of\ sector = \frac{1}{2} r^2 \theta$$

When θ is in degrees:

$$Length\ of\ arc = 2\pi r \left(\frac{\theta}{360^0} \right)$$

$$Area\ of\ sector = \pi r^2 \left(\frac{\theta}{360^0} \right)$$

Triangle:



Triangle

$$Perimeter = a + b + c$$

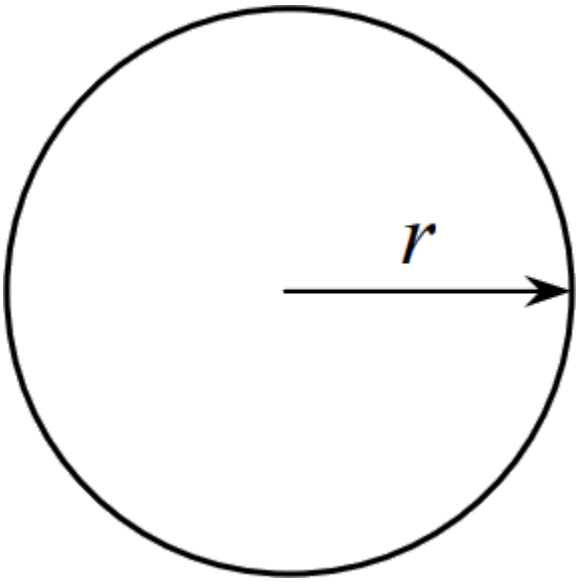
$$Area = \frac{1}{2} \times a \times h$$

$$= \frac{1}{2} \times a \times b \times \sin \quad C$$

$$= \sqrt{s(s-a) \times (s-b) \times (s-c)}$$

$$where\ s = \frac{a+b+c}{2}$$

Circle/Disc:



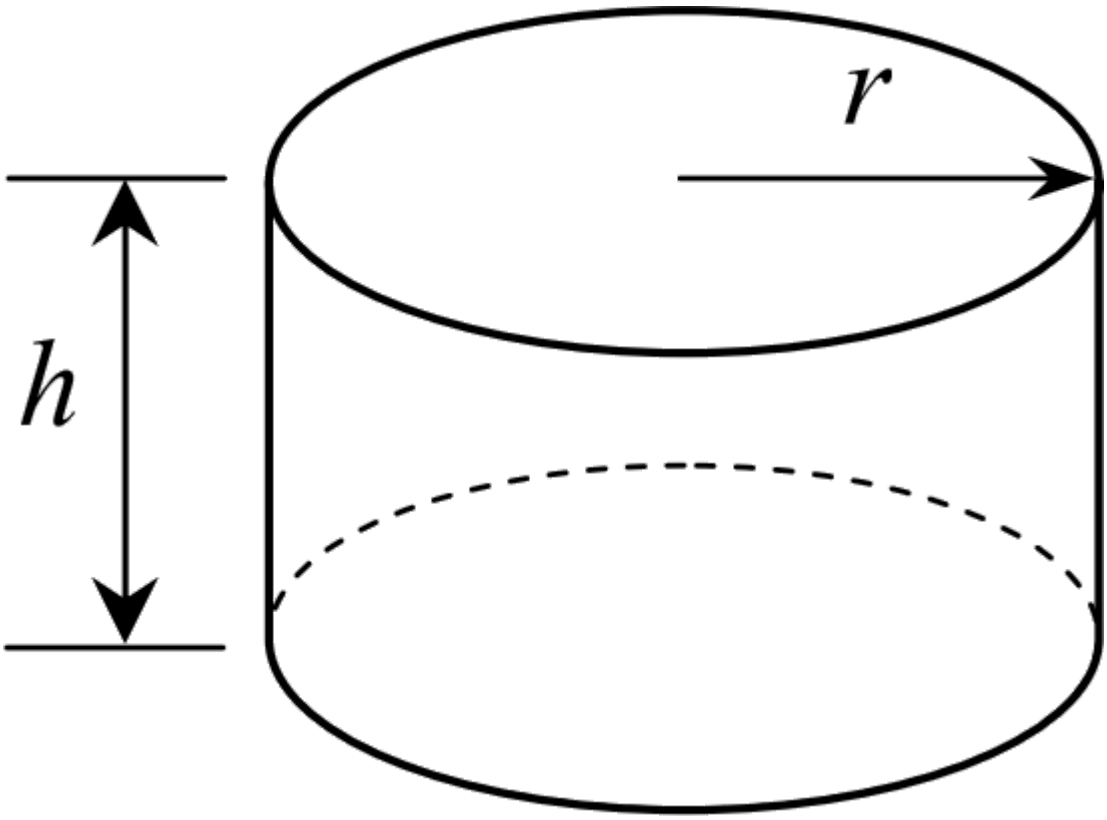
Circle/Disc

$$Lenth\ of\ circle = 2\pi r$$

$$Area\ of\ disc = \pi r^2$$

Surface are and volume:

Cylinder:

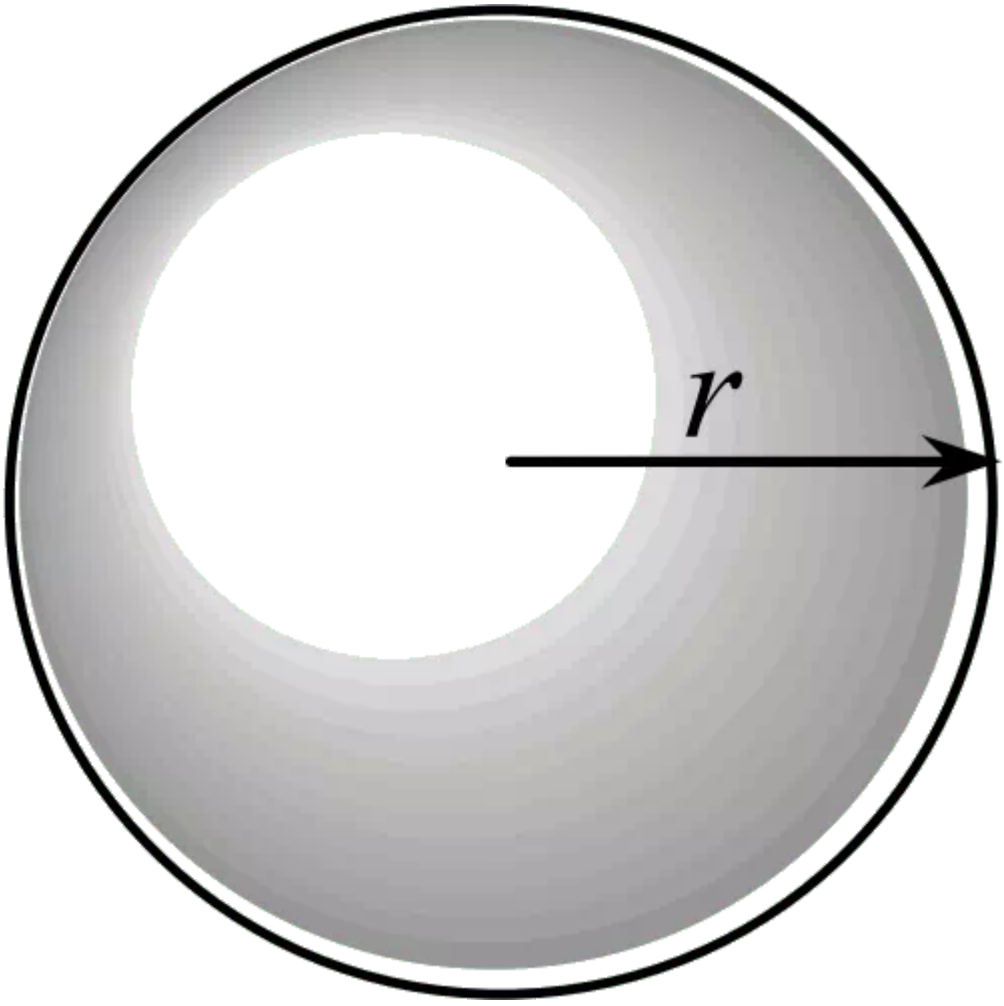


Cylinder

$$Curved\ surface\ area = 2\pi rh$$

$$volume = \pi r^2 h$$

Sphere:

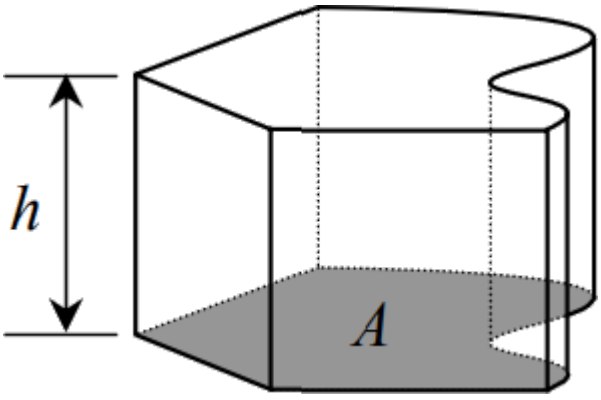


Sphere

$$Surface\ area = 4\pi r^2$$

$$Volume = \frac{4}{3}\pi r^2$$

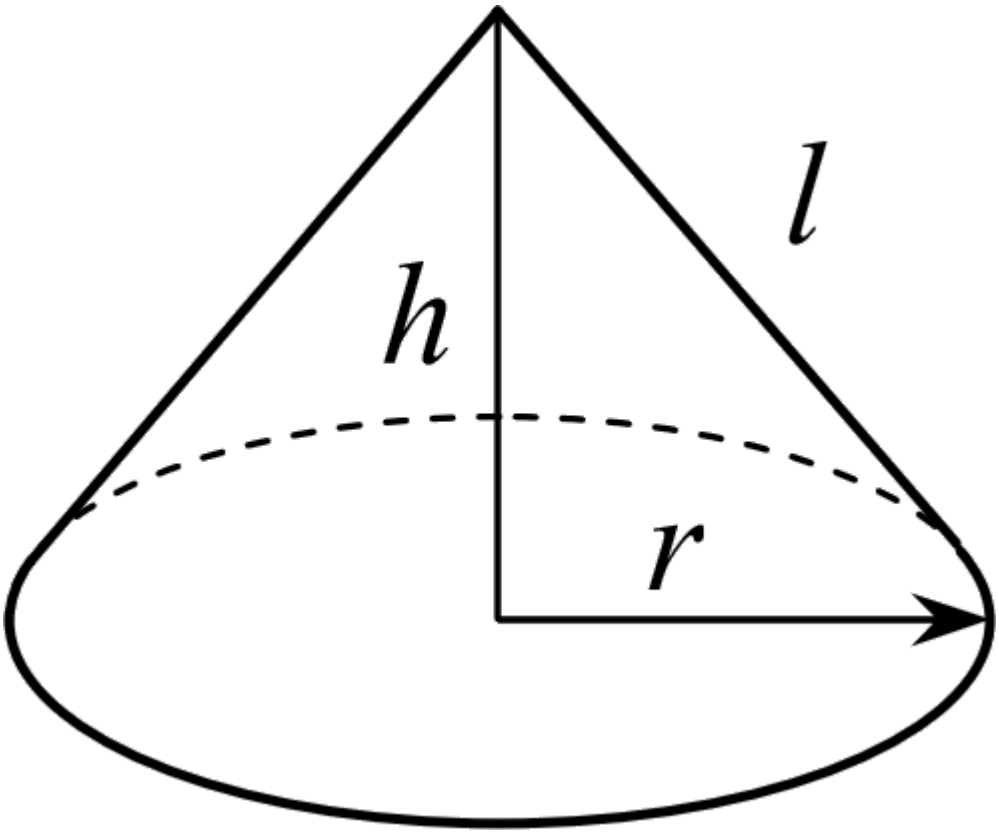
Solid of uniform cross-section (prism):



Solid of Uniform Cross-Section (Prism)

$$Volume = A \times h,\ where\ A\ is\ the\ area\ of\ the\ base.$$

Cone:

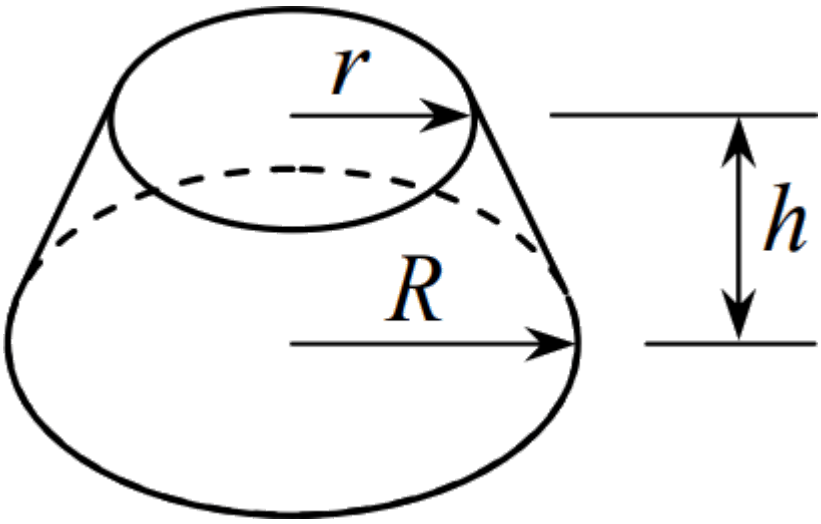


Cone

$$Curved\ surface\ area = \pi rl$$

$$Volume = \frac{1}{3}\pi r^2 h$$

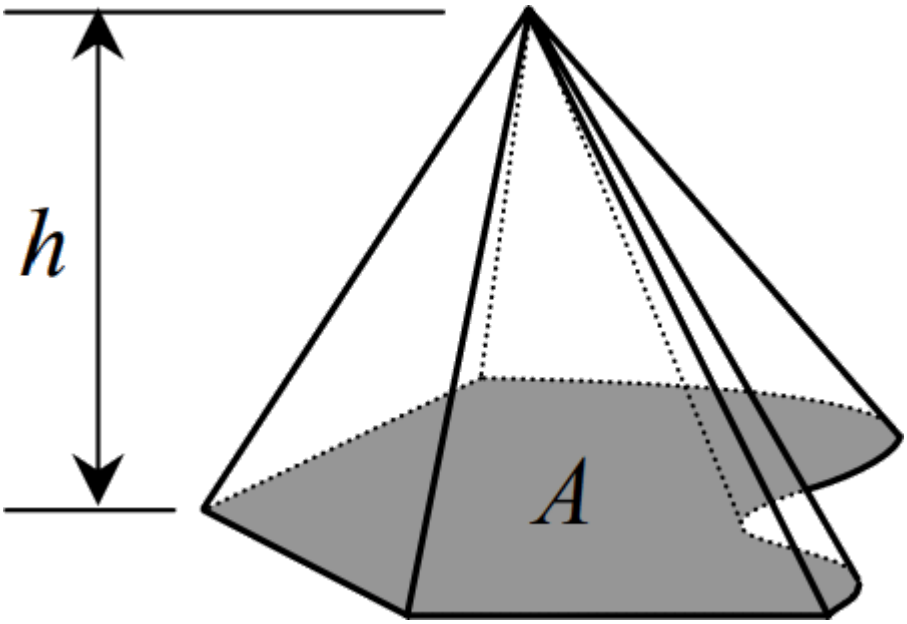
Frustum of a cone:



Frustum of a Cone

$$Volume - \frac{1}{3}\pi h\left(R^2 + Rr + r^2\right)$$

Pyramid on any base:



Pyramid on Any Base

$$Volume = \frac{1}{3} A \times h, \text{ where } A \text{ is the area of the base.}$$