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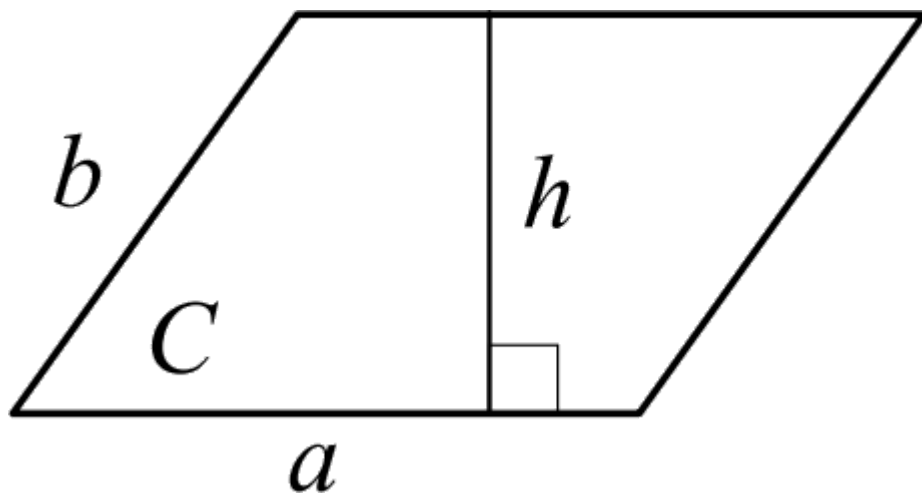
**Examrace**

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## Surface, Area and Volumes Formulae for Competitive Exams

### Length and area

#### Parallelogram:

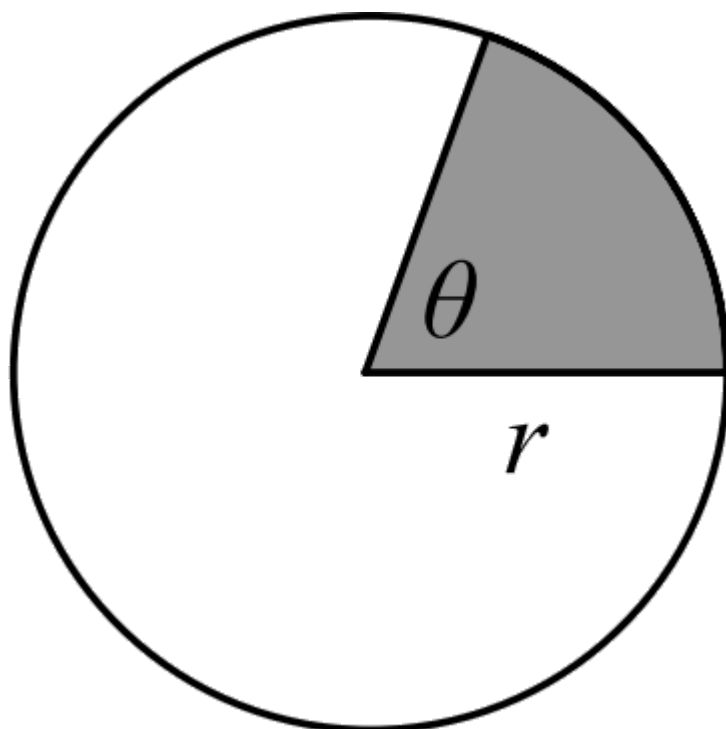


*Parallelogram*

$$\text{Perimeter} = 2a + 2b$$

$$\text{Area} = a \times h = a \times b \times \sin C$$

#### Are/Sector:



*Are/Sector*

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When  $\theta$  is in radians:

$$\text{Length of arc} = r \times \theta$$

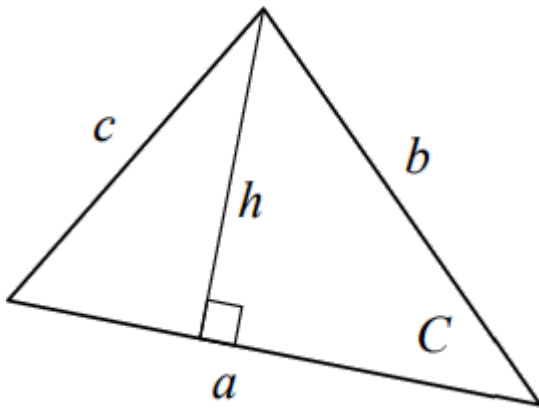
$$\text{Area of sector} = \frac{1}{2} r^2 \theta$$

When  $\theta$  is in degrees:

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

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

**Triangle:**



Triangle

$$\text{Perimeter} = a + b + c$$

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

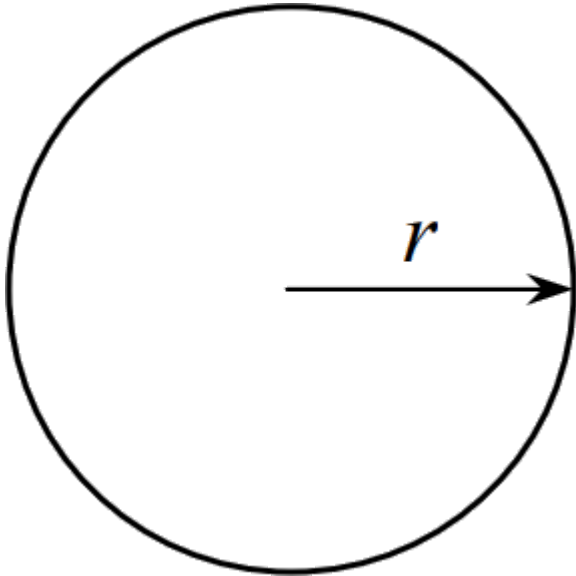
$$= \frac{1}{2} \times a \times b \times \sin C$$

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

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

**Circle/Disc:**

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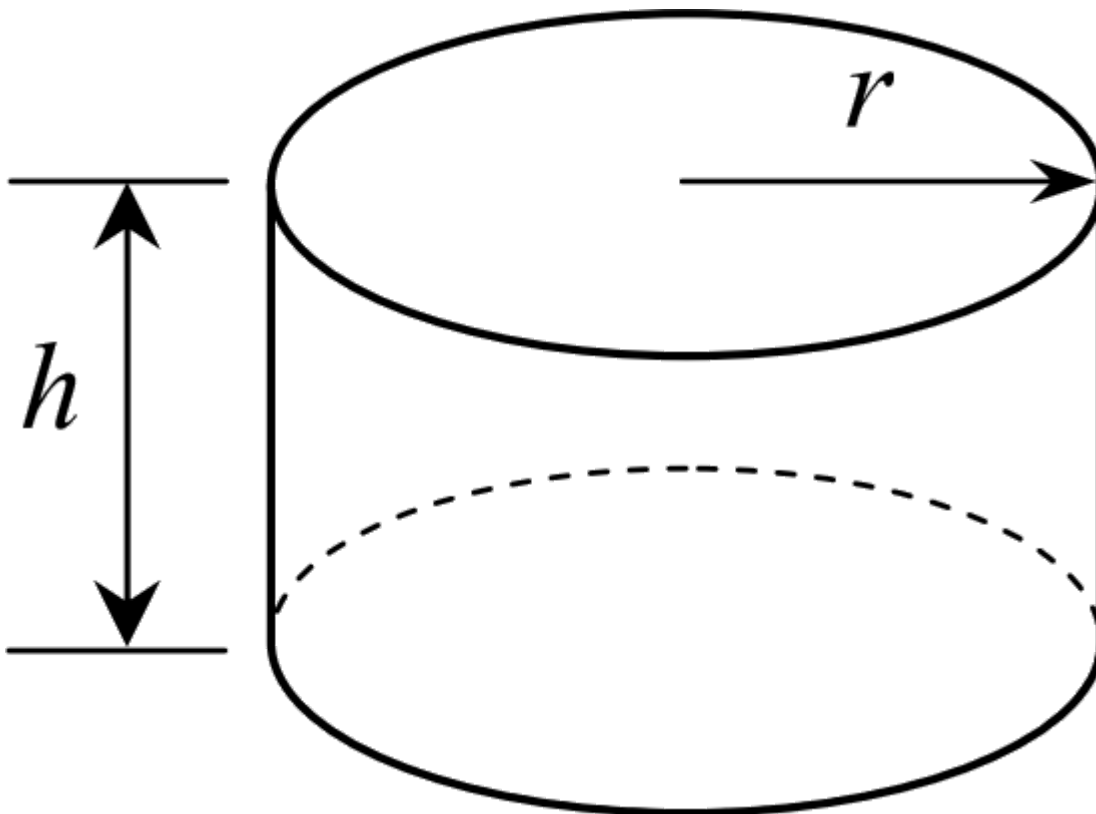
*Circle/Disc*

*Length of circle =  $2\pi r$*

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

**Surface are and volume:**

**Cylinder:**



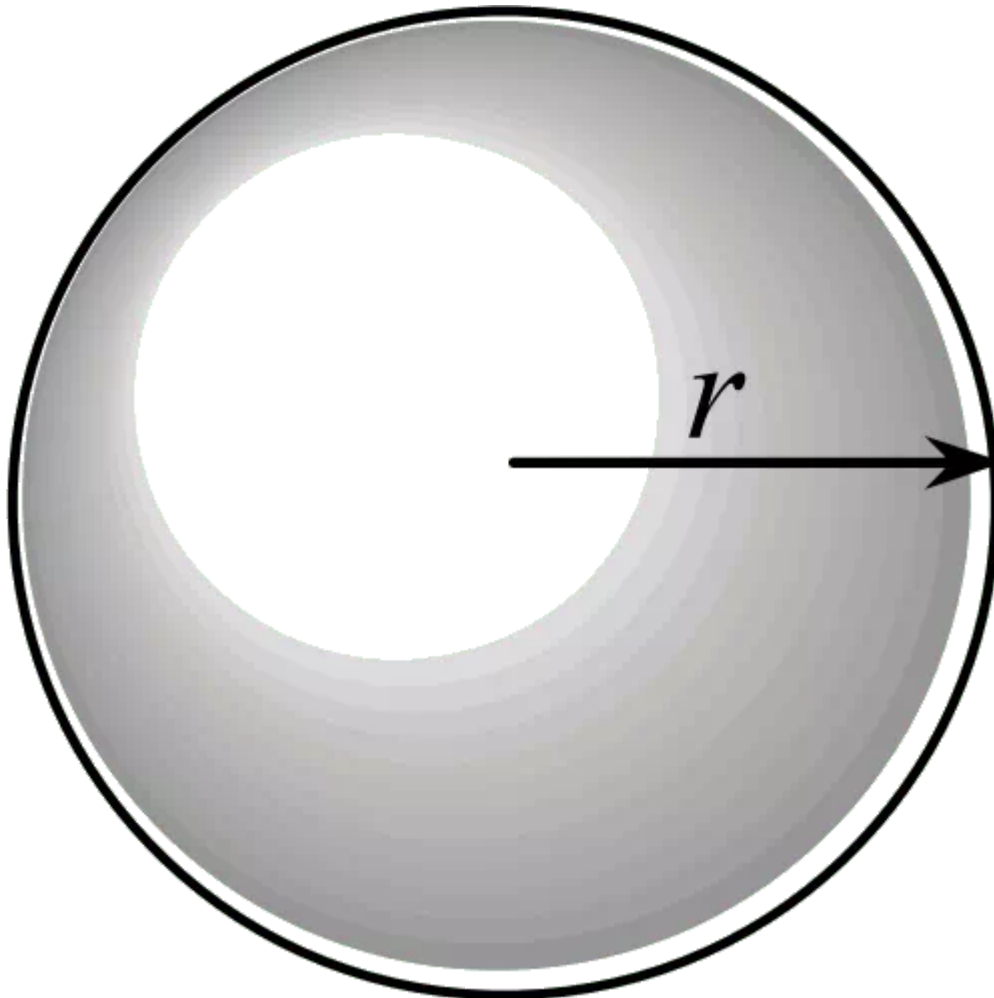
*Cylinder*

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

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

**Sphere:**

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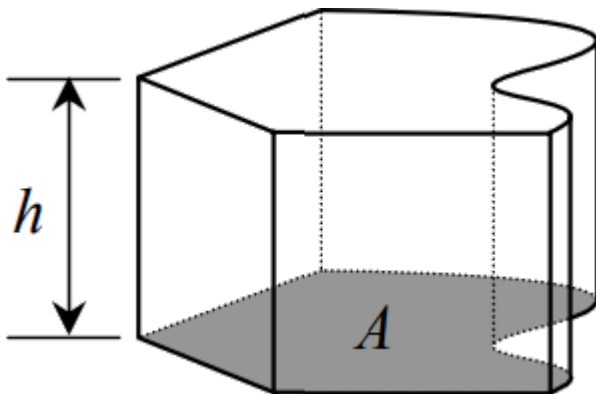


*Sphere*

$$\text{Surface area} = 4\pi r^2$$

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

**Solid of uniform cross-section (prism):**

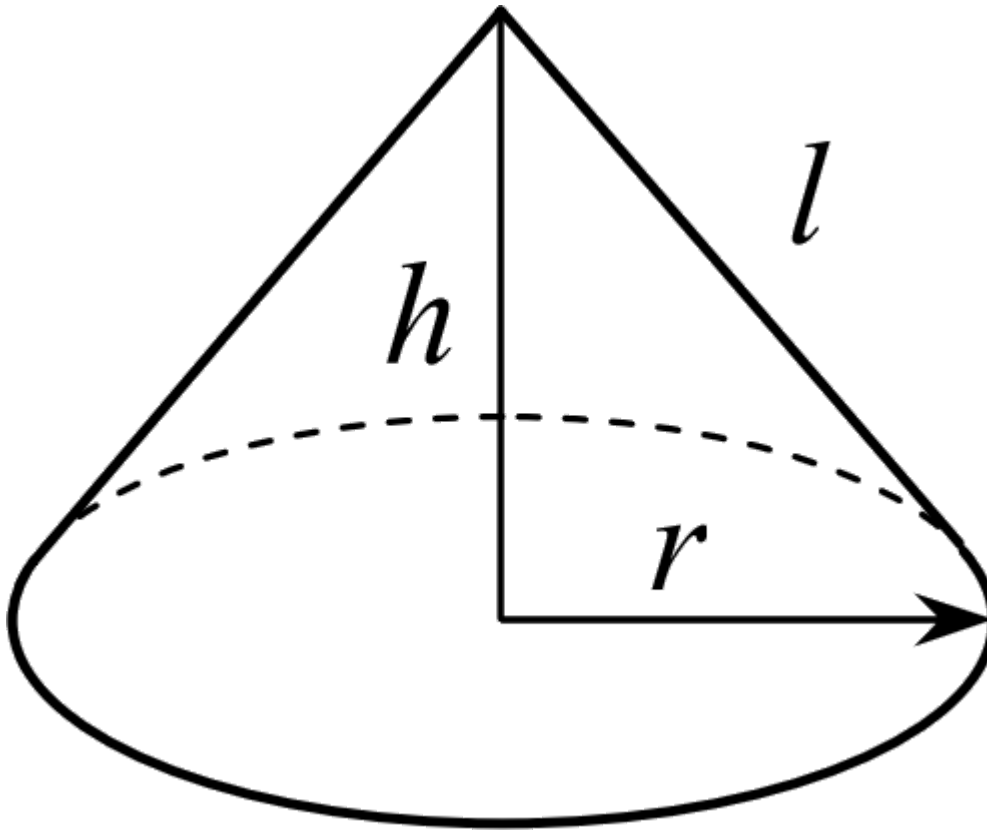


*Solid of Uniform Cross-Section (Prism)*

*Volume = A × h, where A is the area of the base.*

**Cone:**

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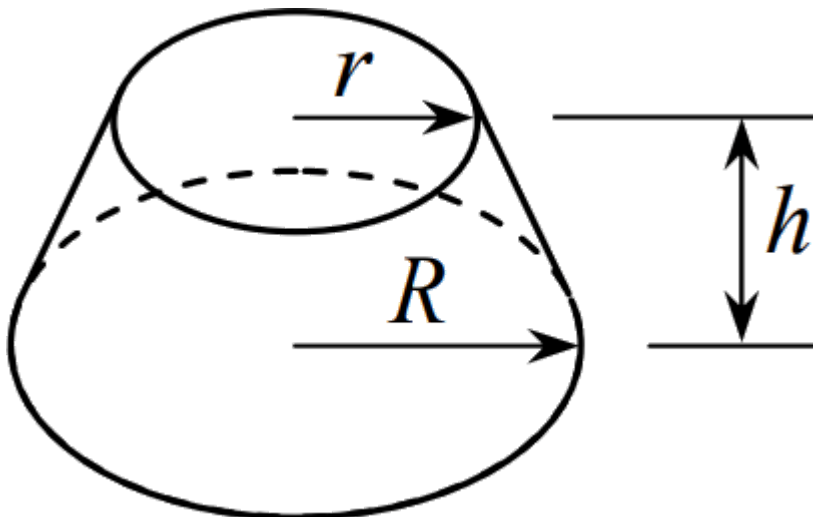


Cone

$$\text{Curved surface area} = \pi r l$$

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

**Frustum of a cone:**

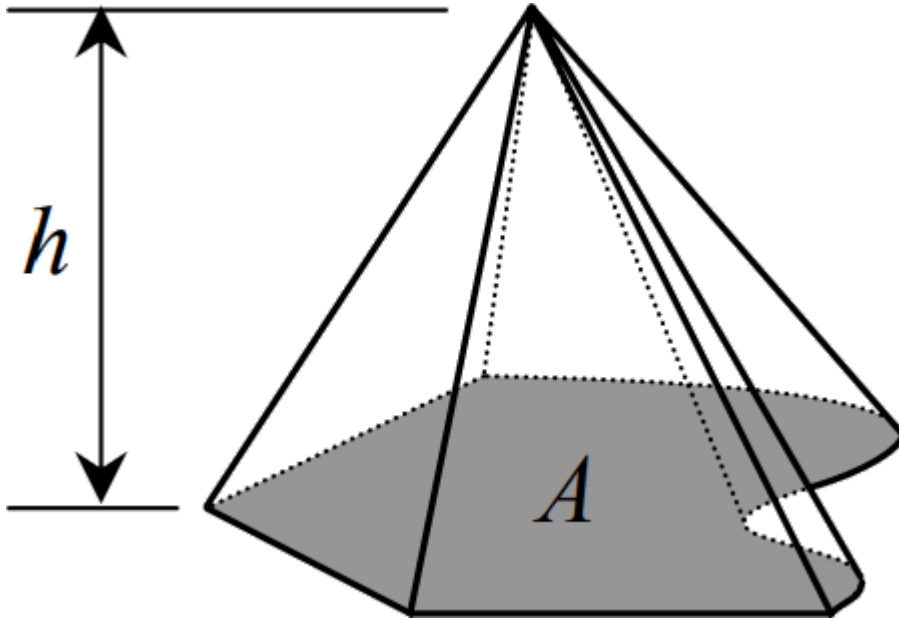


Frustum of a Cone

$$\text{Volume} = \frac{1}{3} \pi h (R^2 + Rr + r^2)$$

**Pyramid on any base:**

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*Pyramid on Any Base*

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