

9 - Length, Area and Volume

Circles:

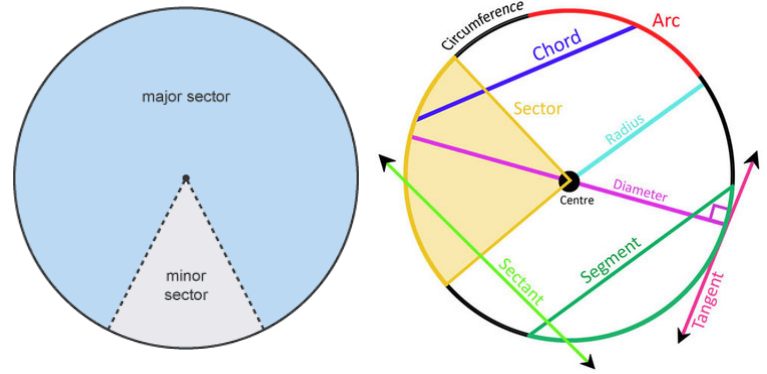
- Circle Area $\rightarrow \pi r^2$
- Circumference $\rightarrow \pi D$
- Semi - Circle Area $\rightarrow \pi r^2 \div 2$
- Semi - Circle Perimeter $\rightarrow (\pi D \div 2) + D$
- Area of a sector $\rightarrow \Theta/360 \times \pi r^2$
- Length of an arc $\rightarrow \Theta/360 \times \pi D$
- Perimeter of Sector $\rightarrow \Theta/360 \times \pi D + D$

Area

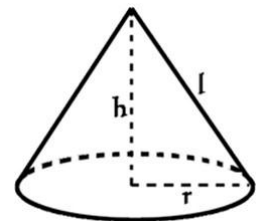
- Triangle Area $\rightarrow b \times h \div 2$
- Trapezium Area $\rightarrow \frac{1}{2}(a+b) \times h$
- Parallelogram Area $\rightarrow b \times h$
- Cuboid Volume $\rightarrow l \times w \times h$
- Prism volume $\rightarrow \text{area of cross section} \times h/\text{length}$
- Cylinder volume $\rightarrow \pi r^2 h$ = (area of cross section x height)
- Cylinder Surface area $\rightarrow \pi D \times h + 2(\pi r^2)$ = Curved SA + area of 2 bases
- Curved SA of cylinder $\rightarrow \pi D \times h$ = circumference x height
- Pyramid volume $\rightarrow \frac{1}{3}b \times h$ = $\frac{1}{3}(\text{area of base} \times \text{height})$
- Cone Volume $\rightarrow \frac{1}{3}\pi r^2 h$ = $\frac{1}{3}(\text{area of base} \times \text{height})$
- Cone Surface area $\rightarrow \pi r l + (\pi r^2/\text{area of base})$
- Perimeter $\rightarrow \text{Circumference proportion} + \text{left over sides}$
- Sphere volume $\rightarrow \frac{4}{3}\pi r^3$
- Sphere SA $\rightarrow 4\pi r^2$
- Hemisphere $\rightarrow (\frac{4}{3}\pi r^3) \div 2$
- Hemisphere SA $\rightarrow 2\pi r^2 + \text{base area}$

length $x:y$
 area $x^2:y^2$
 volume $x^3:y^3$

Smaller surface/area = bigger pressure exerted as the force cannot spread



π = pie	b = base
r = radius	h = height
D = diameter	l = slant height
Θ = angle	



$$l = \sqrt{r^2 + h^2}$$