EQUATIONS FROM GEOMETRY

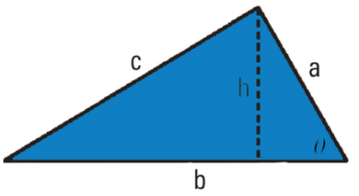
Triangle

$h = a \sin \theta$

Area = 1/2bh

(Law of Cosines)

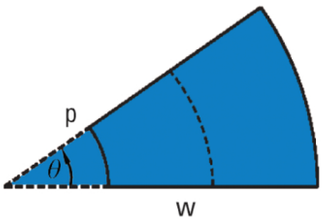
$c^2 = a^2 + b^2 - 2ab \cos \theta$



Sector of Circular Ring

(p = average radius,
w = width of ring,
θ in radians)

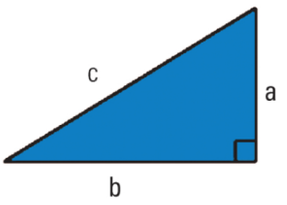
Area = θpw



Right Triangle

(Pythagorean Theorem)

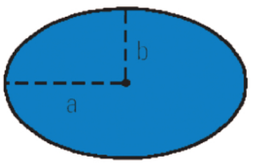
$c^2 = a^2 + b^2$



Ellipse

Area = πab

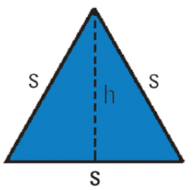
Circumference $\approx 2\pi\sqrt{\frac{a^2 + b^2}{2}}$



Equilateral Triangle

$h = \frac{\sqrt{3}s}{2}$

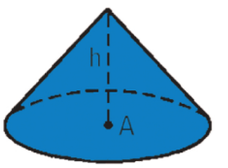
Area = $\frac{\sqrt{3}s}{2}$



Cone

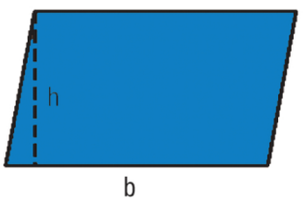
(A = area of base)

Volume = $\frac{Ah}{3}$



Parallelogram

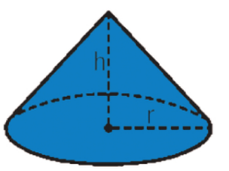
Area = bh



Right Circular Cone

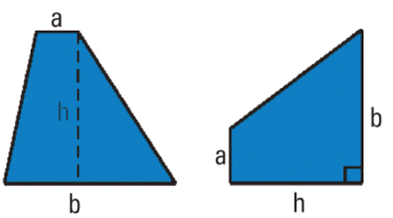
Volume = $\frac{\pi r^2 h}{3}$

Lateral Surface Area = $\sqrt{r^2 + h^2}$



Trapezoid

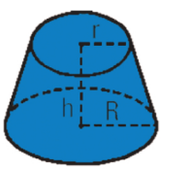
Area = $\frac{h}{2}(a + b)$



Frustum of Right Circular Cone

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

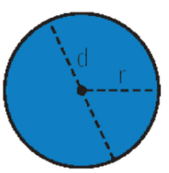
Lateral Surface Area = $\pi s(R + r)$



Circle

Area = $\pi r^2 = \frac{\pi d^2}{4}$

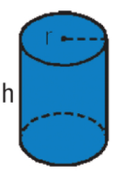
Circumference = $2\pi r$
= πd



Right Circular Cylinder

Area = $\pi r^2 h$

Lateral Surface Area = $2\pi rh$

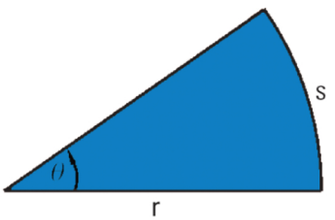


Sector of Circle

(θ in radians)

Area = $\frac{\theta r^2}{2}$

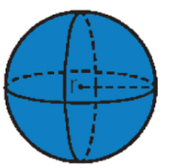
$s = r\theta$



Sphere

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

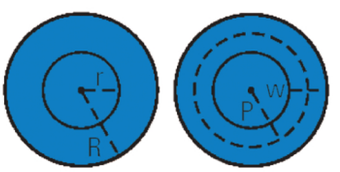
Surface Area = $4\pi r^2$



Circular Ring

(p = average radius,
w = width of ring)

Area = $\pi(R^2 - r^2)$
= $2\pi pw$



Wedge

(A = area of upper face,
B = area of base)

A = B sec θ