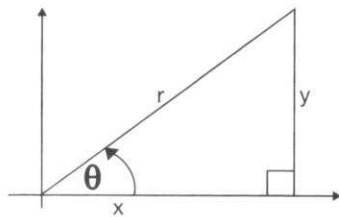


# MATHEMATICS

## Trigonometry Ratios:

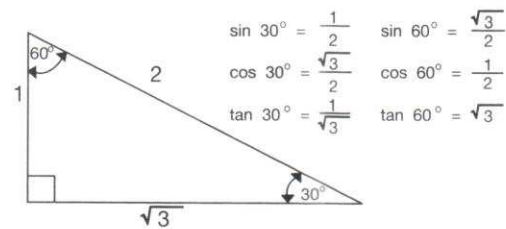
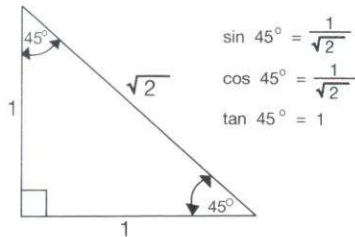


**Memory Tip: SohCahToa**

$$\sin \theta = \frac{y}{r} \left( \frac{\text{opp.}}{\text{hyp.}} \right) = \frac{1}{\csc \theta}$$

$$\cos \theta = \frac{x}{r} \left( \frac{\text{adj.}}{\text{hyp.}} \right) = \frac{1}{\sec \theta}$$

$$\tan \theta = \frac{y}{x} \left( \frac{\text{opp.}}{\text{adj.}} \right) = \frac{1}{\cot \theta}$$

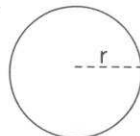


## Geometry Formulas:



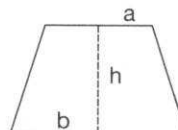
**Rectangle**

Perimeter =  $2(l+w)$   
Area =  $lw$



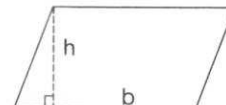
**Circle**

Circumference =  $2\pi r$   
Area =  $\pi r^2$   
 $r$  = radius



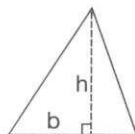
**Trapezoid**

Area =  $\frac{1}{2}(a+b)h$



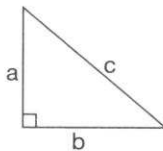
**Parallelogram**

Area =  $bh$



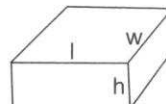
**Triangle**

Area =  $\frac{bh}{2}$



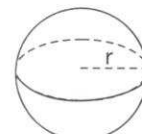
**Right Triangle**

(Pythagorean Theorem)  
 $c^2 = a^2 + b^2$



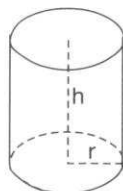
**Rectangular Prism**

Surface Area =  $2lw + 2wh + 2lh$   
Volume =  $lwh$



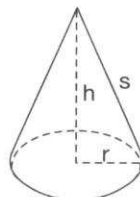
**Sphere**

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



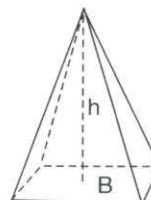
**Cylinder**

Surface Area =  $2\pi rh + 2\pi r^2$   
Volume =  $\pi r^2 h$



**Cone**

Surface Area =  $\pi r^2 + \pi rs$   
Volume =  $\frac{\pi r^2 h}{3}$



**Pyramid**

Volume =  $\frac{Bh}{3}$   
( $B$  = area of base)