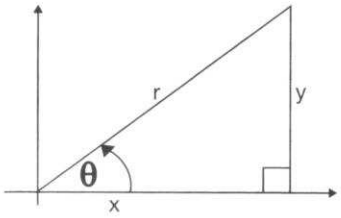
MATHEMATICS

Trigonometry Ratios:

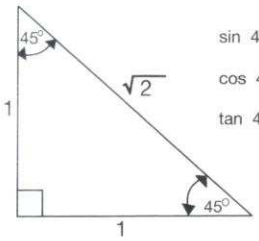


Memory Tip: SohCahToa

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

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

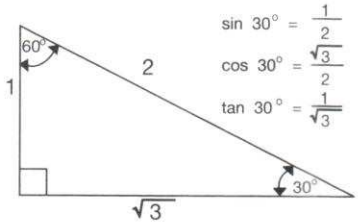
$\tan \theta = \frac{y}{x} \left({}^{opp.}/_{adj.} \right) = {}^{1}/_{\cot \theta}$



$\sin 45^\circ = \frac{1}{\sqrt{2}}$

$\cos 45^\circ = \frac{1}{\sqrt{2}}$

$\tan 45^\circ = 1$

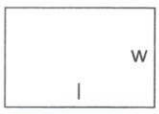


$\sin 30^\circ = \frac{1}{2}$ $\quad \sin 60^\circ = \frac{\sqrt{3}}{2}$

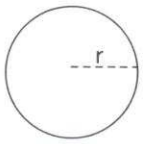
$\cos 30^\circ = \frac{\sqrt{3}}{2}$ $\quad \cos 60^\circ = \frac{1}{2}$

$\tan 30^\circ = \frac{1}{\sqrt{3}}$ $\quad \tan 60^\circ = \sqrt{3}$

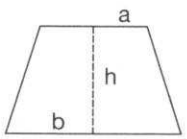
Geometry Formulas:



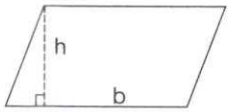
Rectangle
Perimeter = 2 (l+w)
Area = lw



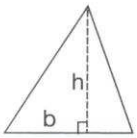
Circle
Circumference = $2\pi r$
Area = πr^2
r = radius



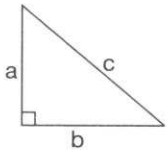
Trapezoid
Area = $\frac{1}{2}$ (a+b)h



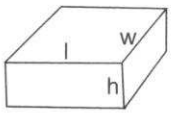
Parallelogram
Area = bh



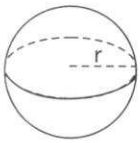
Triangle
Area = $\frac{bh}{2}$



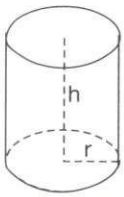
Right Triangle
(Pythagorean Theorem)
$c^2 = a^2 + b^2$



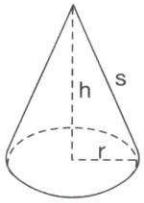
Rectangular Prism
Surface Area = 2lw+2wh+2lh
Volume = lwh



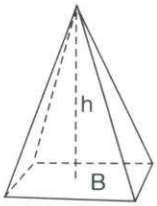
Sphere
Surface Area = $4 \pi r^2$
Volume = $\frac{4 \pi r^3}{3}$



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)