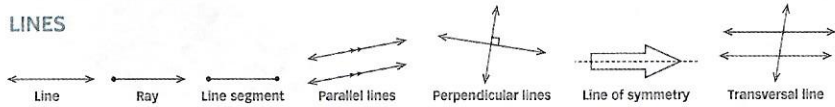
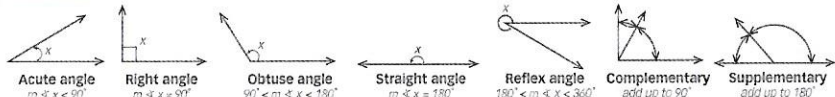


Geometry

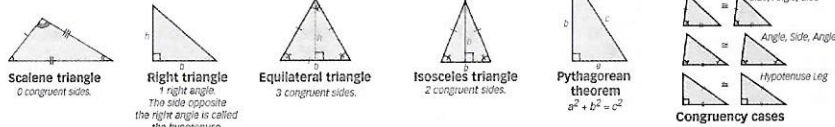
LINES



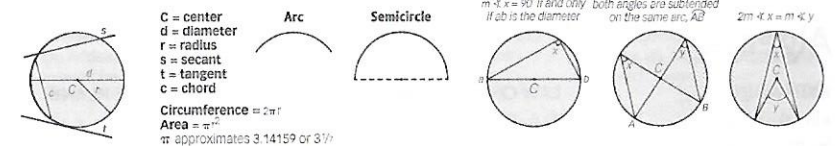
ANGLES



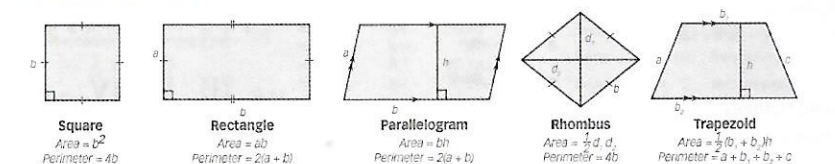
TRIANGLES Area = $\frac{bh}{2}$



CIRCLES



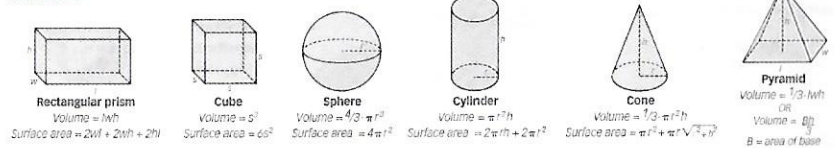
QUADRILATERALS



REGULAR POLYGONS Sum of interior angles for any polygon = 180(n-2). (n = number of angles)

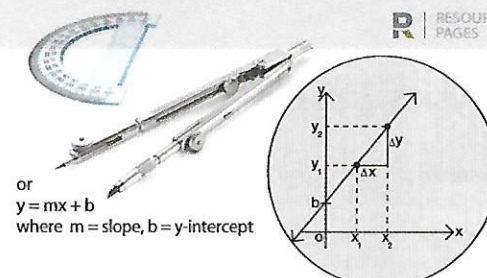


SOLIDS



Linear

Equation of a straight line
 $y - y_1 = m(x - x_1)$
 where $m = \text{slope} = \frac{\text{rise}}{\text{run}} = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$



or $y = mx + b$
 where $m = \text{slope}$, $b = y\text{-intercept}$

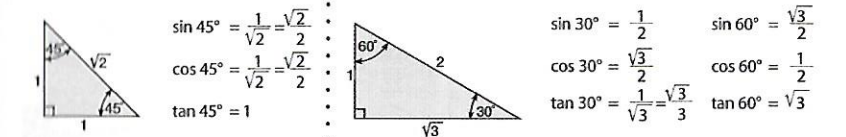
Trigonometry

TRIGONOMETRIC RATIOS

$\sin \theta = \frac{y}{r}$ (opposite/hypotenuse) $= \frac{1}{\csc \theta}$
 $\cos \theta = \frac{x}{r}$ (adjacent/hypotenuse) $= \frac{1}{\sec \theta}$
 $\tan \theta = \frac{y}{x}$ (opposite/adjacent) $= \frac{1}{\cot \theta}$

$\cot \theta = \frac{\cos \theta}{\sin \theta}$
 $\tan \theta = \frac{\sin \theta}{\cos \theta}$
 $\sin^2 \theta + \cos^2 \theta = 1$
 $1 + \tan^2 \theta = \sec^2 \theta$

$1 + \cot^2 \theta = \csc^2 \theta$
 $\cos^2 \theta - \sin^2 \theta = \cos 2\theta$
 $\sec \theta = \frac{1}{\cos \theta}$

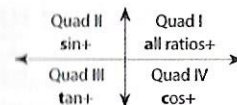


$\sin(A+B) = \sin A \cos B + \cos A \sin B$
 $\sin(A-B) = \sin A \cos B - \cos A \sin B$

$\cos(A+B) = \cos A \cos B - \sin A \sin B$
 $\cos(A-B) = \cos A \cos B + \sin A \sin B$

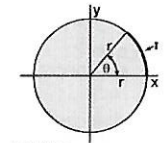
$\tan(A+B) = \frac{\tan A + \tan B}{1 - \tan A \tan B}$
 $\tan(A-B) = \frac{\tan A - \tan B}{1 + \tan A \tan B}$

CAST



Value of trig ratio

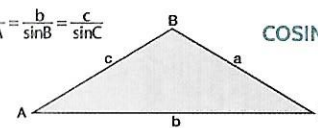
θ	0	$\frac{\pi}{2}$	π	$\frac{3\pi}{2}$	2π
$\sin \theta$	0	1	0	-1	0
$\cos \theta$	1	0	-1	0	1
$\tan \theta$	0	*	0	*	0



*undefined for $\frac{\pi}{2}$ and $\frac{3\pi}{2}$

$\theta = 1$ radian
 2π radians = 360°

SINE LAW $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$ COSINE LAW



$a^2 = b^2 + c^2 - 2bc \cos A$
 $b^2 = a^2 + c^2 - 2ac \cos B$
 $c^2 = a^2 + b^2 - 2ab \cos C$

$y = \sin(x)$ $y = \cos(x)$ $y = \tan(x)$

