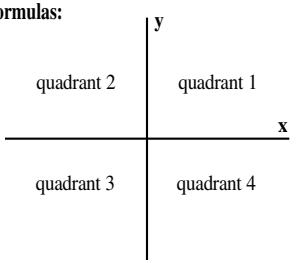
THE STANDARD DEVIANTS

Present

The Twisted World of Trigonometry (Part 1)

PART 1

Formulas:



To Find A Radian Value

$1^\circ = \frac{\pi}{180}$ radians

To Find A Degree Value

1 radian = $\frac{180^\circ}{\pi}$

The Special Angles' Degree and Radian Measurements

Degrees	Radians	Degrees	Radians
0°	0	210°	7 /6
30°	/6	225°	5 /4
45°	/4	240°	4 /3
60°	/3	270°	3 /2
90°	/2	300°	5 /3
120°	2 /3	315°	7 /4
135°	3 /4	330°	11 /6
150°	5 /6	360°	2
180°			

The Special Angles' Trig Function Values

$\sin(30^\circ) = \frac{1}{2} = \cos(60^\circ)$ $\csc(30^\circ) = \frac{2}{1} = \sec(60^\circ)$

$\cos(30^\circ) = \frac{3}{2} = \sin(60^\circ)$ $\sec(30^\circ) = \frac{2}{3}\,3 = \csc(60^\circ)$

$\tan(30^\circ) = \frac{3}{3} = \cot(60^\circ)$ $\cot(30^\circ) = \frac{3}{1} = \tan(60^\circ)$

$\sin(45^\circ) = \frac{2}{2} = \cos(45^\circ)$ $\csc(45^\circ) = \frac{2}{1}$

$\tan(45^\circ) = 1$ $\cot(45^\circ) = 1$

The Special Angles' Trig Function Values (continued)

$\tan(45^\circ) = 1$ $\cot(45^\circ) = 1$

$\sin(0^\circ) = 0 = \cos(90^\circ)$ $\csc(0^\circ) = \text{undefined} = \sec(90^\circ)$

$\cos(0^\circ) = 1 = \sin(90^\circ)$ $\sec(0^\circ) = 1 = \csc(90^\circ)$

$\tan(0^\circ) = 0 = \cot(90^\circ)$ $\cot(0^\circ) = \text{undefined} = \tan(90^\circ)$

The Pythagorean Theorem

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

The Six Trig Functions

$\sin(\ ) = \frac{OPP}{HYP}$ $\csc(\ ) = \frac{HYP}{OPP}$

$\cos(\ ) = \frac{ADJ}{HYP}$ $\sec(\ ) = \frac{HYP}{ADJ}$

$\tan(\ ) = \frac{OPP}{ADJ}$ $\cot(\ ) = \frac{ADJ}{OPP}$

For Oblique Triangles

- If the last known value, moving from left to right, is a side then use the law of cosines.
- If the last known value, moving from left to right, is an angle then use the law of sines.

Law of Sines

$\frac{\sin}{a} = \frac{\sin}{b} = \frac{\sin}{c}$

Law of Cosines

$a^2 = b^2 + c^2 - 2bc \cos$

$b^2 = a^2 + c^2 - 2ac \cos$

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