Exponential Form

$y=ab^x$

A change to x shifts the function +left or -right

To Eval Logs

Example: log(base 9)27 to.... $9^x=27$..... x=3/2

Example of Solving Exp Equations

$7^{3x}=20$ to $\log 7^{3x}=\log 20$.... divide both sides by 3log7..... get x=log20/3log7..... finally use the calculator to end.

Trig Identities

Reciprocal Identities

$\sin\theta=\frac{1}{\csc\theta}$	$\cos\theta=\frac{1}{\sec\theta}$	$\tan\theta=\frac{1}{\cot\theta}$
$\csc\theta=\frac{1}{\sin\theta}$	$\sec\theta=\frac{1}{\cos\theta}$	$\cot\theta=\frac{1}{\tan\theta}$

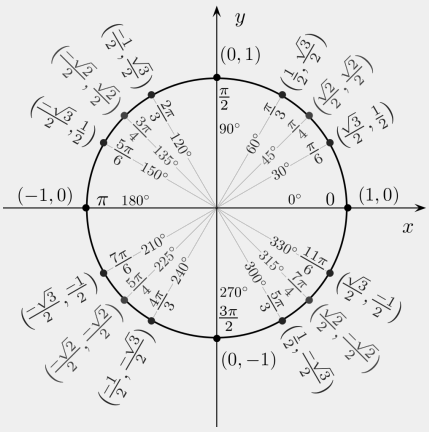
Half Angle Identities

$$\sin(\frac{a}{2})=\pm\sqrt{\frac{(1-\cos a)}{2}}$$

$$\cos(\frac{a}{2})=\pm\sqrt{\frac{(1+\cos a)}{2}}$$

$$\tan(\frac{a}{2})=\frac{1-\cos a}{\sin a}=\frac{\sin a}{1+\cos a}$$

Trig Identities and Unit Circle



Quadratic Formula

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Double Angle

$$\sin(2\alpha) = 2\sin(\alpha)\cos(\alpha)$$
$$\cos(2\alpha) = \cos^2(\alpha) - \sin^2(\alpha)$$
$$\cos(2\alpha) = 2\cos^2(\alpha) - 1$$
$$\cos(2\alpha) = 1 - 2\sin^2(\alpha)$$
$$\tan(2\alpha) = \frac{2\tan(\alpha)}{1 - \tan^2(\alpha)}$$

Note for Linear Modeling

Find line of best fit, f(x) is the prediction of that number plugged into formula.

Properties of Parabolas Note

Find AOS first; x=number of AOS

Identities

cscx= 1/sinx
secx=1/cosx
cotx=1/tanx
tanx=sinx/cosx
cotx=cosx/sinx