

Exponential Form

$$y=ab^x$$

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

To Eval Logs

Example: $\log(\text{base } 9)27$ 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 $3\log 7$ get $x=\log 20/3\log 7$ finally use the calculator to end.

Trig Identities

Reciprocal Identities

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

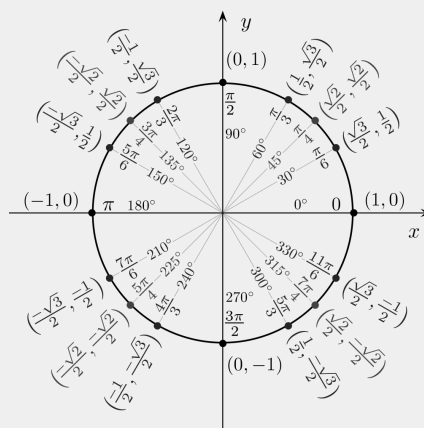
Half Angle Identities

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

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

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

Trig Identities and Unit Circle



By **mattontiveros**

Published 3rd June, 2015.

Last updated 3rd June, 2015.

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Quadratic Formula

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

Double Angle

$$\begin{aligned}\sin(2a) &= 2\sin(a)\cos(a) \\ \cos(2a) &= \cos^2(a) - \sin^2(a) \\ \cos(2a) &= 2\cos^2(a) - 1 \\ \cos(2a) &= 1 - 2\sin^2(a) \\ \tan(2a) &= \frac{2\tan(a)}{1 - \tan^2(a)}\end{aligned}$$

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

$\csc x = 1/\sin x$
 $\sec x = 1/\cos x$
 $\cot x = 1/\tan x$
 $\tan x = \sin x/\cos x$
 $\cot x = \cos x/\sin x$



By **mattontiveros**

cheatography.com/mattontiveros/

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