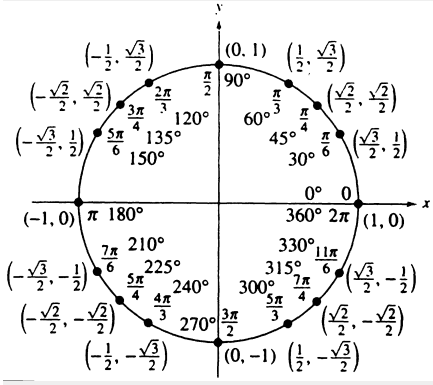
Algebra 2 Final Cheat Sheet

by nshea via cheatography.com/21909/cs/4345/

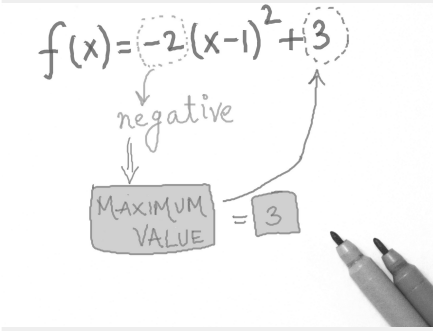
Unit Circle



Quadratic formula

Inverse of a function

Maximum and Minimum



Solving exponential equations

Pythagorean Identities

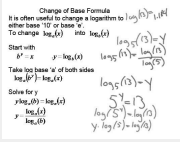
Pythagorean Identities	Reciprocal Identities		Quotient Identities	Periodic Identities
$\sin^2 x + \cos^2 x = 1$ $\sin^2 x = 1 - \cos^2 x$ $\cos^2 x = 1 - \sin^2 x$	$\sin x = \frac{1}{\csc x}$	$\csc x = \frac{1}{\sin x}$	$\tan x = \frac{\sin x}{\cos x}$	$\sin(x + 360°) = \sin x$ $\sin(x + 2\pi) = \sin x$
$\tan^2 x + 1 = \sec^2 x$ $\tan^2 x = \sec^2 x - 1$	$\cos x = \frac{1}{\sec x}$	$\sec x = \frac{1}{\cos x}$	$\cot x = \frac{\cos x}{\sin x}$	$\cos(x + 360°) = \cos x$ $\cos(x + 2\pi) = \cos x$
$1 + \cot^2 x = \csc^2 x$ $\cot^2 x = \csc^2 x - 1$	$\tan x = \frac{1}{\cot x}$	$\cot x = \frac{1}{\tan x}$		$\tan(x + 180°) = \tan x$ $\tan(x + \pi) = \tan x$

Even/Odd Identities		Cofunction Identities		Half Angle Identities
$\sin(-x) = -\sin x$	$\csc(-x) = -\csc x$	$\sin(90° - x) = \cos x$ $\sin(\frac{\pi}{2} - x) = \cos x$	$\cos 90° - x) = \sin x$ $\cos(\frac{\pi}{2} - x) = \sin x$	$\sin \frac{x}{2} = \pm\sqrt{\frac{1 - \cos x}{2}}$
$\cos(-x) = \cos x$	$\sec(-x) = \sec x$	$\tan(90° - x) = \cot x$ $\tan(\frac{\pi}{2} - x) = \cot x$	$\cot 90° - x) = \tan x$ $\cot(\frac{\pi}{2} - x) = \tan x$	$\cos \frac{x}{2} = \pm\sqrt{\frac{1 + \cos x}{2}}$
$\tan(-x) = -\tan x$	$\cot(-x) = -\cot x$	$\sec 90° - x) = \csc x$ $\sec(\frac{\pi}{2} - x) = \csc x$	$\csc 90° - x) = \sec x$ $\csc(\frac{\pi}{2} - x) = \sec x$	$\tan \frac{x}{2} = \pm\sqrt{\frac{1 - \cos x}{1 + \cos x}}$

Sum/Difference Identities	Double Angle Identities		Power Reducing Identities
$\sin(x \pm y) = \sin x \cos y \pm \cos x \sin y$	$\sin(2x) = 2\sin x \cos x$	$\cos(2x) = 1 - 2\sin^2 x$	$\sin^2 x = \frac{1 - \cos 2x}{2}$
$\cos(x \pm y) = \cos x \cos y \mp \sin x \sin y$	$\cos(2x) = \cos^2 x - \sin^2 x$	$\cos(2x) = 2\cos^2 x - 1$	$\cos^2 x = \frac{1 + \cos 2x}{2}$
$\tan(x \pm y) = \frac{\tan x \pm \tan y}{1 \mp \tan x \tan y}$	$\tan(2x) = \frac{2\tan x}{1 - \tan^2 x}$		$\tan^2 x = \frac{1 - \cos 2x}{1 + \cos 2x}$

Product To Sum Identities	Sum To Product Identities
$\sin x \sin y = \frac{1}{2}[\cos(x - y) - \cos(x + y)]$	$\sin x + \sin y = 2\sin\left(\frac{x + y}{2}\right)\cos\left(\frac{x - y}{2}\right)$
$\cos x \cos y = \frac{1}{2}[\cos(x - y) + \cos(x + y)]$	$\sin x - \sin y = 2\cos\left(\frac{x + y}{2}\right)\sin\left(\frac{x - y}{2}\right)$
$\sin x \cos y = \frac{1}{2}[\sin(x + y) + \sin(x - y)]$	$\cos x + \cos y = 2\cos\left(\frac{x + y}{2}\right)\cos\left(\frac{x - y}{2}\right)$
$\cos x \sin y = \frac{1}{2}[\sin(x + y) - \sin(x - y)]$	$\cos x - \cos y = -2\sin\left(\frac{x + y}{2}\right)\sin\left(\frac{x - y}{2}\right)$

Logarithmic Equations



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