Cheatography

Algebra II Final Cheat Sheet

by respinoza2 via cheatography.com/21804/cs/4298/

Identities

$$csc \theta = \frac{1}{\sin \theta}$$

$$sec \theta = \frac{1}{\cos \theta}$$

$$cos^{2} \theta + \sin^{2} \theta = 1$$

$$1 + tan^{2} \theta = sec^{2} \theta$$

$$tan \theta = \frac{1}{tan \theta}$$

$$tan \theta = \frac{\sin \theta}{\cos \theta}$$

$$cot \theta = \frac{\cos \theta}{\sin \theta}$$

SOH CAH TOA

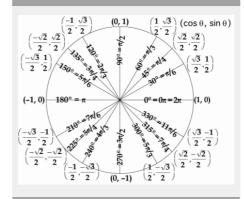


This is used to find exact cosines, tangents, or sines of angles.

Exponential ang Logarithmic

Exponential = b^{X} Logarithmic = $\ln x$

The Unit Circle



Double Angle Identities

$$\sin(2a) = 2\sin(a)\cos(a)$$

$$\cos(2a) = \cos^{2}(a) - \sin^{2}(a)$$

$$\cos(2a) = 2\cos^{2}(a) - 1$$

$$\cos(2a) = 1 - 2\sin^{2}(a)$$

$$\tan(2a) = \frac{2\tan(a)}{1 - \tan^{2}(a)}$$

Product-Sum Identities

$$\begin{aligned} \sin\alpha + \sin\beta &= 2\sin\frac{\alpha+\beta}{2}\cos\frac{\alpha-\beta}{2}\\ \sin\alpha - \sin\beta &= 2\cos\frac{\alpha+\beta}{2}\sin\frac{\alpha-\beta}{2}\\ \cos\alpha + \cos\beta &= 2\cos\frac{\alpha+\beta}{2}\cos\frac{\alpha-\beta}{2}\\ \cos\alpha - \cos\beta &= -2\sin\frac{\alpha+\beta}{2}\sin\frac{\alpha-\beta}{2} \end{aligned}$$

Half-Angle Identities

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

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

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

Sum and Difference Identities

$$\begin{aligned} \sin(\alpha+\beta) &= \sin\alpha\cos\beta + \cos\alpha\sin\beta\\ \sin(\alpha-\beta) &= \sin\alpha\cos\beta - \cos\alpha\sin\beta\\ \cos(\alpha+\beta) &= \cos\alpha\cos\beta - \sin\alpha\sin\beta\\ \cos(\alpha-\beta) &= \cos\alpha\cos\beta + \sin\alpha\sin\beta\\ \tan(\alpha+\beta) &= \frac{\tan\alpha + \tan\beta}{1 - \tan\alpha\tan\beta}\\ \tan(\alpha-\beta) &= \frac{\tan\alpha - \tan\beta}{1 + \tan\alpha\tan\beta} \end{aligned}$$



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