

Identities

$$\sec x = 1/\cos x$$

$$\csc x = 1/\sin x$$

$$\cot = 1/\tan x$$

Cotangent/tangent

$$\tan x = \sin x/\cos x$$

$$\cot x = \cos x/\sin x$$

Reciprocal Identities

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

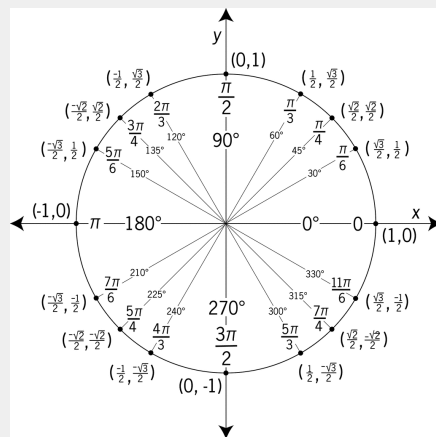
$$\csc \theta = \frac{1}{\sin \theta} \quad \sec \theta = \frac{1}{\cos \theta} \quad \cot \theta = \frac{1}{\tan \theta}$$

Domain and Range

Domain: The domain of a function is the set of all possible input values (often the "x" variable), which produce a valid output from a particular function. It is the set of all real numbers for which a function is mathematically defined.

Range: The range is the set of all possible output values (usually the variable y, or sometimes expressed as f(x)), which result from using a particular function.

Unit Square



Logarithmic and Exponential Equations

$$y = \ln x$$

$$y = b^x$$

Half-Angle Identities

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

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

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

Double-angle Identities

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

$$\cos(2\theta) = \cos^2 \theta - \sin^2 \theta$$

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



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Published 3rd June, 2015.

Last updated 3rd June, 2015.

Page 1 of 1.

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