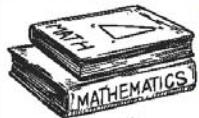


Name :

Class :



Trigonometric Identities

A Trigonometric Identity is an equation involving the trigonometric functions that holds for all values of the variable.

Trigonometric Identities		
Reciprocal Identities	Pythagorean Identities	Half-Angle Formulas
$\csc \theta = \frac{1}{\sin \theta}$	$\sin^2 \theta + \cos^2 \theta = 1$	$\sin\left(\frac{\theta}{2}\right) = \pm\sqrt{\frac{1-\cos\theta}{2}}$
$\sec \theta = \frac{1}{\cos \theta}$	$\sec^2 \theta = 1 + \tan^2 \theta$	$\cos\left(\frac{\theta}{2}\right) = \pm\sqrt{\frac{1+\cos\theta}{2}}$
$\cot \theta = \frac{1}{\tan \theta}$	$\csc^2 \theta = 1 + \cot^2 \theta$	$\tan\left(\frac{\theta}{2}\right) = \frac{1-\cos\theta}{\sin\theta}$

SOHCAHTOA

$$\sin\theta = \frac{O}{H} \quad \cos\theta = \frac{A}{H} \quad \tan\theta = \frac{O}{A}$$

Prove the following Trigonometric Identities

1) $\tan\theta + \cot\theta = \csc\theta \sec\theta$

2) $\csc\theta \sin\theta \sec\theta \cos\theta = 1$

3) $\cos\theta + \tan\theta \sin\theta = \sec\theta$

4) $2\cos^2\theta - 1 = 1 - 2\sin^2\theta$

5) $\csc\theta + \tan\theta \sec\theta = \csc\theta \sec^2\theta$

6) $(\sec\theta - \tan\theta)(\sec\theta + \tan\theta) = 1$