Name : Class :

Trigonometric Expressions

A trigonometric expression is a mathematical expression that involves trigonometric functions, such as: Sine (sin) Cosine (cos) Tangent (tan) Cotangent (cot) Secant (sec) Cosecant (csc).

Sine	Sin	$\sin\angle\theta = \frac{\text{Opposite}}{\text{Hypotenuse}}$
Cosine	Cos	$\cos\angle\theta = \frac{\text{Adjacent}}{\text{Hypotenuse}}$
Tangent	Tan	$\tan\angle\theta = \frac{\text{Opposite}}{\text{Adjacent}}$
Secant	Sec	$\sec\angle\theta = \frac{\text{Hypotenuse}}{\text{Adjacent}}$
Cosecant	Csc	$\csc\angle\theta = \frac{\text{Hypotenuse}}{\text{Opposite}}$
Cotangent	Cot	$\cot\angle\theta = \frac{\text{Adjacent}}{\text{Opposite}}$

Simplify the following trigonometric expression.

1) $\tan^2 t(\csc^2 t - 1)$

2) $\dfrac{\tan t}{\tan t + \cot t}$

3) $\dfrac{1 - \cos^2 t}{1 + \cos t}$

4) $\sec t \cot t - \cot t \cos t$

5) $\dfrac{\cos^2 t}{1 - \cos^2 t}$

6) $\sin t \tan t - \csc t \tan t$