

## Quiz: Pythagorean, Quotient and Reciprocal Identities

1. Determine an expression equivalent to  $\frac{\tan \theta \csc^2 \theta}{\sec^2 \theta}$ .
  - A.  $\tan \theta$
  - B.  $\cot \theta$
  - C.  $\tan^2 \theta$
  - D.  $\tan^3 \theta$
  
2. Determine an expression equivalent to  $\tan \theta + \cot \theta$ .
  - A. 1
  - B.  $\sin \theta \cos \theta$
  - C.  $\sec \theta \csc \theta$
  - D.  $\sin \theta + \cos \theta$
  
3. Which expression is equivalent to  $\frac{\sin \theta + \cos \theta \cot \theta}{\cot \theta}$  ?
  - A.  $\csc \theta$
  - B.  $\cos \theta$
  - C.  $\sin \theta$
  - D.  $\sec \theta$
  
4. Determine the restriction(s) for the expression  $\frac{\tan \theta}{2 \cos \theta - 1}$ 
  - A.  $\cos \theta \neq \frac{1}{2}$
  - B.  $\sin \theta \neq 0$
  - C.  $\sin \theta \neq 0, \cos \theta \neq \frac{1}{2}$
  - D.  $\cos \theta \neq 0, \cos \theta \neq \frac{1}{2}$

5. Prove each trig identity. Describe when trig identities are used in each proof.

(a)  $-\cot x = \frac{1 - \cot x}{1 - \tan x}$

$-\cot x$	$\frac{1 - \cot x}{1 - \tan x}$
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(b)  $\frac{\sin x}{1 + \cos x} + \frac{\sin x}{1 - \cos x} = 2 \csc x$

$\frac{\sin x}{1 + \cos x} + \frac{\sin x}{1 - \cos x}$	$2 \csc x$
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(c)  $\frac{\cos \theta}{1 - \sin \theta} = \frac{1 + \sin \theta}{\cos \theta}$

$\frac{\cos \theta}{1 - \sin \theta}$	$\frac{1 + \sin \theta}{\cos \theta}$
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