

3.12A Equivalent Representations of Trig Functions

AP Precalculus

Name: _____

CA #1

Use trig identities to write each expression in terms of a single trig identity.

1. $\sin x \sec x$

2. $(1 - \sin^2 x) \sec x$

3. $\sin^2 x + \cos^2 x + \cot^2 x$

4. $\frac{\sin \theta \csc \theta}{\cot \theta}$

5. $\frac{\sec^2 x - 1}{\cot x}$

6. $\frac{\sec \theta}{\cos \theta}$

Use trig identities to solve the trig equations for $0 \leq x \leq 2\pi$. Find exact values.

7. $\sec^2 x - 1 = \tan x$

8. $2 \cos^2 x \sec x = 1$

Use trig identities to solve the trig equations for $0 \leq x \leq 2\pi$. Find exact values.

9. $\sin^2 x(\csc x + 1) = 0$

10. $\frac{\cos^2 x}{\cot^2 x} = 1$

Answers to 3.12A CA #1

1. $\tan x$	2. $\cos x$	3. $\csc^2 x$
4. $\tan \theta$	5. $\tan^3 x$	6. $\sec^2 \theta$
7. $x = 0, \frac{\pi}{4}, \pi, \frac{5\pi}{4}, 2\pi$	8. $x = \frac{\pi}{3}, \frac{5\pi}{3}$	
9. $x = \frac{3\pi}{2}$ ($0, \pi$, and 2π are extraneous solutions)	10. $x = \frac{\pi}{2}, \frac{3\pi}{2}$	