

### 3.12A Equivalent Representations of Trig Functions

AP Precalculus

Name: \_\_\_\_\_

**CA #2**

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

1.  $\sin x \csc^2 x$

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

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

4.  $\frac{\cos \theta}{\cot \theta}$

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

6.  $\frac{\cos \theta \tan \theta}{\csc \theta}$

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

7.  $\cos^2 x - 1 = \sin x$

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

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

9.  $\sin x (\csc x - \sin x) = 0$

10.  $\frac{\sin x}{\tan x} = 1$

**Answers to 3.12A CA #1**

1. $\csc x$	2. $\cot^2 x$	3. $\sec^2 x$
4. $\sin \theta$	5. $\cot x$	6. $\sin^2 \theta$
7. $x = 0, \frac{\pi}{2}, \pi, 2\pi$	8. $x = \frac{\pi}{2}, \frac{3\pi}{2}$	
9. $x = \frac{\pi}{2}, \frac{3\pi}{2}$	10. $x = 0, 2\pi$	