Pre-Calculus
Section 5.1 Practice A

Name: _____

1. Since $\sin^2 x + \cos^2 x = 1$: a) $1 - \sin^2 x =$ _____ b) $1 - \cos^2 x =$ _____

2. Since $1 + \tan^2 x = \sec^2 x$: a) $\sec^2 x - 1 =$ _____ b) $\sec^2 x - \tan^2 x =$ _____

3. Since $1 + \cot^2 x = \csc^2 x$ a) $\csc^2 x - 1 =$ _____ b) $\csc^2 x - \cot^2 x =$ _____

For numbers 4 – 11, simplify.

4. $\tan\theta \cdot \cos\theta$

5. $\sin^2 x - 1$

6. $(\csc^2 x - \cot^2 x)(\sec^2 x - 1)$

7. $\dfrac{\sin x \cos x}{1 - \cos^2 x}$

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

For numbers 9 – 14, match the trigonometric identity with one of the expressions:

9. $\sin x \cot x$

10. $\cos x \tan x$

11. $\sin x(\csc x - \sin x)$

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

13. $\dfrac{\csc x}{\cot x}$

14. $\dfrac{\sec x}{\csc x}$

a) $\sec x$

b) $\cos x$

c) $\sin x$

d) $\tan x$

e) $\cos^2 x$

f) 1

Pre-Calculus
Section 5.1 Practice B

Name: _____

For numbers 1 – 7, simplify.

1. $(1 - \cos x)(1 + \cos x)$

2. $\cot y \bullet \sin y$

3. $1 - \dfrac{\sin^2 \theta}{\tan^2 \theta}$

4. $\sec x \cos x$

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

6. $\dfrac{\sin^2 \theta}{1 - \cos^2 \theta}$

For numbers 8 – 12, match the trigonometric identity with one of the expressions:

7. $\dfrac{1}{\cos^2 x} - \dfrac{1}{\cot^2 x}$

8. $\sin x \sec x$

9. $\cos^2 x\left(\sec^2 x - 1\right)$

10. $\sec^2 x \cot^2 x$

11. $\cot x \sec x$

12. $\dfrac{\sec^2 x - 1}{\sin^2 x}$

a) $\csc x$

b) $\tan x$

c) $\sin^2 x$

d) $\csc^2 x$

e) $\sec^2 x$