Student: _____ **Date:** _____ **Time:** _____	**Instructor:** Fred Khoury **Course:** Math 2312-1000 Precalculus (Fall - 2015) **Book:** Lial: College Algebra and Trigonometry, 4e	**Assignment:** Quiz Sec 3.1

1. Complete the sentence so the result is an identity. Let x be any real number.

___ + sin ^{2}x = 1

- A. **sin** ^{2}x
- B. **cos** ^{2}x
- C. **tan** ^{2}x
- D. **csc** ^{2}x

2. Complete the sentence so the result is an identity. Let x be any real number.

___ + tan ^{2}x = sec ^{2}x

- A. **sin** ^{2}x
- B. -1
- C. **cos** ^{2}x
- D. 1

3. Complete the sentence so the result is an identity. Let x be any real number.

sin x = (___)(**cos** x)

- A. **tan** x
- B. **cot** x
- C. **csc** x
- D. **sec** x

4. Complete the sentence so the result is an identity. Let x be any real number.

cos x = (**cot** x)(___)

- A. **csc** x
- B. **tan** x
- C. **sin** x
- D. **sec** x

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5. Write the expression in terms of sine and cosine, and simplify so that no quotients appear in the final expression.

csc x(**sin** x + **cos** x)

A. **sec** x **csc** x

B. -2 **tan** ^{2}x

C. **sin** x **tan** x

D. 1 + **cot** x

6. Write the expression in terms of sine and cosine, and simplify so that no quotients appear in the final expression.

tan x(**cot** x − **cos** x)

A. 0

B. − **sec** ^{2}x

C. 1 − **sin** x

D. 1

7. Write the expression in terms of sine and cosine, and simplify so that no quotients appear in the final expression.

tan $^2\theta$ **csc** $^2\theta$

A. **sin** θ

B. **cos** $^3\theta$

C. **sec** $^2\theta$

D. **tan** $^2\theta$

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8. Perform the indicated operations and simplify the result.

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

A. $\sin\theta\tan\theta$

B. $1+\cot\theta$

C. $-2\tan^2\theta$

D. $\sec\theta\csc\theta$

9. Perform the indicated operations and simplify the result.

$$\tan^2\theta - 3\sin\theta\tan\theta\sec\theta$$

A. $1+\cot\theta$

B. $\sin\theta\tan\theta$

C. $-2\tan^2\theta$

D. $\sec\theta\csc\theta$

10. Factor the trigonometric expression. Simplify the result, if possible.

$$\sec^4 x - 2\sec^2 x\tan^2 x + \tan^4 x$$

A. 1

B. $\sec^2 x(1+\tan^2 x)$

C. 2

D. $\sec^2 x + \tan^2 x$

11. Factor the trigonometric expression. Simplify the result, if possible.

$$1-\sin^3 x$$

A. $(1-\sin x)(1+\sin x+\sin^2 x)$

B. $(1-\sin x)(1-2\sin x+\sin^2 x)$

C. $(1-\sin x)^3$

D. $(1-\sin x)(\cos x+\sin^2 x)$

12. Factor the trigonometric expression. Simplify the result, if possible.

$\tan^4 x - \sec^4 x$

A. $-2\tan^2 x - 1$

B. $\sec^2 x$

C. $\sec^2 x + \tan^2 x$

D. $\tan^2 x - \sec^2 x$

13. Simplify $\cos x(\csc x - \sec x) - \cot x$.

A. $\cos^2 x - \tan^2 x$

B. 1

C. 0

D. -1