**Pre-Calculus Unit 7 REVIEW: Trigonometric Identities**

Name: _____ Date: _____ Period: ____

**In addition to the problems on Quiz 1, 2, and 3 verify the following identities:**

1.) $tan\ x + \frac{cos\ x}{1+sin\ x} = sec\ x$

2.) $-2\cot x = \frac{\sin x}{1+\cos x} - \frac{\sin x}{1-\cos x}$

**Find exact values of the following using Sum and Difference Identities:**

3.) $sin\ \frac{13\pi}{12}$

4.) $\cos\frac{-7\pi}{6}$

**Simplify the following using Sum/Difference and Double-Angle Identities:**

5.) $2\sin 135°\cos 135°$

6.) $cos^2 25° - sin^2 25°$

7.) $\sin 110°\cos 40° + \cos 110°\sin 40°$

8.) $\cos 200°\ cos25° - \sin 200°\sin 25°$

**Verify the following Identities:**

9.) $\tan x - \tan y = \frac{\sin(x-y)}{\cos x\cos y}$

10.) $\cot\alpha - \tan\beta = \frac{\cos(\alpha+\beta)}{\sin\alpha\cos\beta}$

**Continue verifying the following Identities:**

11.) $2\sin a\cos b = \sin(a+b) + \sin(a-b)$

12.) $\sin 2\theta = \frac{2\tan\theta}{1+tan^2\theta}$

13.) $\cos 2y = \frac{1-tan^2y}{1+tan^2y}$

14.) $\sin 2\beta = 2\cot\beta\ sin^2\beta$

15.) $\tan\alpha = \frac{1-\cos 2\alpha}{\sin 2\alpha}$

16.)

$$\frac{\cos x}{1+\sin x} + \frac{1+\sin x}{\cos x}$$

A) $\frac{(1-\sin x)}{(1-\sin x)}\frac{\cos x}{(1+\sin x)} + \frac{1+\sin x}{\cos x}$

B) $\frac{(1-\sin x)(\cos x)}{1-\sin^2 x} + \frac{1+\sin x}{\cos x}$

C) $\frac{(1-\sin x)(\cos x)}{\cos^2 x} + \frac{1+\sin x}{\cos x}$

D) $\frac{1-\sin x}{\cos x} + \frac{1+\sin x}{\cos x}$

E) $= \frac{2}{2\cos x}$

F) $\sec x$

Does an error occur? If yes, on which line? If no error, answer "N"

or N) "no error"