Honors Precalculus Name:_____ Per: _____

Chapter 5 PRACTICE TEST *Use an additional sheet, if necessary, to show your work*

1. Use the fact that $\sin x = -1/2$ and $\tan x > 0$ to get the other 5 trig values.

sin(x) = $-\frac{1}{2}$ cos(x) = tan(x) =

csc(x) = sec(x) = cot(x) =

2. Verify #1 by factoring and #2 by using sines & cosines.

a) $\sin^2 x \sec x - \sec x = -\cos x$

b) $\csc t \sec t - \sin t \sec t = \cot t$

3. Use conjugates to show $\frac{\sin^2\theta}{1+cos\theta} = 1 - cos\theta$

4. Verify $\frac{\cot x \tan x}{\sin x} = \csc x$

5. Verify by using an identity for $\csc^2 x$ first.

$$\frac{\csc^2 x - \cot^2 x}{\tan^2 x \csc^2 x} = \cos^2 x$$

6. Verify $\frac{1}{\sec\theta - 1} + \frac{1}{\sec\theta + 1} = 2\cot\theta \csc\theta$

7. Solve $2\cos x + \sqrt{3} = 0$ on the interval $[0.2\pi)$.

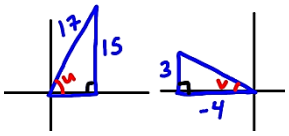
8. Solve $-\cot x - 1 = 0$ on the interval $[0.\pi)$.

8. Solve $\sqrt{3}\csc x - 2 = 0$ for all solutions.

9. Solve $\sin^2 x + \cos x + 1 = 0$ on the interval $[0.2\pi)$.

9. Use a sum and difference formula to find $\cos(15°)$ exactly (no decimals).

10. Given the angles shown, find $\sin(u + v)$.



11. Use sum and difference formulas to find the two solutions on the interval $[0,2\pi)$.

$$sin\left(x + \frac{\pi}{4}\right) + sin\left(x - \frac{\pi}{4}\right) = -1$$

12. Use a half-angle formula to find the exact value for $\cos(75°)$.

13. Use the figure from Problem 10 to find $\sin(2u)$ and $\cos(2u)$ with the double-angle formulas.

14. The equation of a constant standing electric wave in physics is obtained by adding two waves traveling in opposite directions (y_1 *and* y_2). Given the equations for each individual wave, show $y_1 + y_2 = 2Acos\frac{2\pi t}{T}cos\frac{2\pi x}{\lambda}$.

$y_1 = Acos\left(\frac{2\pi t}{T} - \frac{2\pi x}{\lambda}\right)$ and $y_2 = Acos\left(\frac{2\pi t}{T} + \frac{2\pi x}{\lambda}\right)$