

Standard 8 Review: Name: _____ Per: _____

1. Verify the following Trig IDs. Show your work

a. $\cos \theta \sec \theta = 1$

b. $\frac{\sin(90^\circ - \alpha)}{\cos(90^\circ - \alpha)} = \cot \alpha$

c. $\frac{1}{\csc^2 x} + \frac{1}{\sec^2 x} = 1$

d. $\frac{\sec(-\sigma)}{\csc(-\sigma)} = -\tan \sigma$

2. Verify the following Trig IDs. Show your work

a. $\sin^2 \alpha - \sin^4 \alpha = \cos^2 \alpha - \cos^4 \alpha$

b. $\cos^2 \theta + 5 = 6 - \sin^2 \theta$

c. $\frac{1}{\sin x} - \sin x = \frac{\cos^2 x}{\sin x}$

d. $\frac{\sec^2 x - 1}{\csc^2 x - 1} = \tan^4 x$

3. Find the solution(s) of the trig equations in the interval $[0, 2\pi)$.

a. $2\cos x - 1 = 0$

b. $3\tan^2 x - 1 = 0$

c. $\sin x(2\sin x + 1) = 0$

d. $\sec^2 x - \sec x - 2 = 0$

4. Find all the solutions of the equations.

a. $2 \cos x - \sqrt{3} = 0$

b. $\tan^2 x = 3$

c. $\sin^2 x = 3 \cos^2 x$

d. $2 \sec^2 x + \tan^2 x - 3 = 0$

5. Use the Sum and Difference Formulas to find the exact values of the following trig functions. Show your work.

a. $\sin 75^\circ$

use $30^\circ + 45^\circ = 75^\circ$

b. $\cos 15^\circ$

use $45^\circ - 30^\circ = 15^\circ$

c. $\tan 195^\circ$

use $225^\circ - 30^\circ = 195^\circ$

6. Use the Sum and Difference Formulas to write the trig function of an angle.

a. $\cos 60^\circ \cos 45^\circ + \sin 60^\circ \sin 45^\circ =$

b. $\sin 330^\circ \cos 25^\circ + \cos 330^\circ \sin 25^\circ =$

c. $\frac{\tan 125^\circ + \tan 105^\circ}{1 - \tan 125^\circ \tan 105^\circ} =$

7. Find the exact value of the trig functions given that.

$$\sin u = \frac{15}{17} \quad 0 < u < \frac{\pi}{2} \quad \text{and} \quad \cos v = \frac{4}{5} \quad 0 < v < \frac{\pi}{2}$$

a. $\sin(u + v)$

b. $\cos(u + v)$

c. $\sin(u - v)$

d. $\cos(u - v)$

Verify the identities.

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

9. $\sin(2\pi - x) = -\sin x$

10. $\sin\left(\frac{3\pi}{2} + \theta\right) + \sin(\pi - \theta) = 0$