GSE PreCalculus: Unit 4 – Trig Identities
WS 5B.4 – Solving Trig Equations (2)

Name _____
Date _____ Day ___

Solve the following equations.

1. $\tan\theta+\sqrt{3}=0 \qquad \theta\in[0°,360°]$	2. $2\cos\theta+\sqrt{3}=0 \qquad \theta\in[0°,360°]$
3. $2\sin(\theta+47°)=1 \qquad \theta\in[0°,360°]$	4. $\sec(\theta+81°)=2 \qquad \theta\in[0°,360°]$
5. $4\cos^2\theta=1 \qquad \theta\in[0°,90°]$	6. $4\cos^2\theta=3 \qquad \theta\in[90°,180°]$
7. $2\sin\theta\cos\theta=\sqrt{2}\cos\theta \qquad \theta\in[180°,270°]$	8. $\tan\theta\sec\theta=\tan\theta \qquad \theta\in[0°,360°]$
9. $\cos\theta+2=3\cos\theta \qquad \theta\in[-90°,90°]$	10. $2\cos^2\theta-5\cos\theta+2=0 \qquad \theta\in[0°,360°]$

11. $2\sec^2\theta - 3\sec\theta - 2 = 0 \qquad \theta \in [0°, 90°]$	12. $\sin^2\theta + 5\sin\theta + 6 = 0 \qquad \theta \in [0°, 360°]$
13. $(5\sin x - 2)(3\sin x + 2) = 0 \qquad \theta \in [0°, 360°]$	14. $\sin x = \sin 2x \qquad \theta \in [0°, 180°]$

Verify the following identities:

1. $\sin x \cos x \tan x = 1 - \cos^2 x$

2. $\tan x + \cot x = \sec x \csc x$

3. $\dfrac{1+\cos x}{\sin x} = \dfrac{\sin x}{1-\cos x}$

4. $\sin x \sec x = \tan x$

5. $\sin\theta(\cot\theta + \tan\theta) = \sec\theta$

6. $(\sin\theta + \cos\theta)^2 + (\sin\theta - \cos\theta)^2 = 2$

7. $\csc^4 x + \cot^4 x = \csc^2 x + \cot^2 x$