

Name: _____ Period: _____

PC6 - Review **Show all work. Simplify answers.**

Establish the identity.

1) $\tan^2 \theta \cos^2 \theta + \cot^2 \theta \sin^2 \theta = 1$

Establish the identity.

2) $\frac{1 - \sin \theta}{\cos \theta} + \frac{1}{1 + \sin \theta} = \frac{\cos \theta + 1}{\sin \theta + 1}$

Find each of the following

3) $\sin^{-1} \left(\frac{1}{2} \right)$

4) $\cot \left(\sin^{-1} \left(-\frac{1}{3} \right) \right)$

5) $\csc \left(\tan^{-1} \left(-\frac{1}{3} \right) \right)$

Solve each equation for θ on the interval $[0, 2\pi]$.

6) $\tan^2 \theta = \frac{1}{3}$

7) $2\sin^2 \theta - \sin \theta - 1 = 0$

8) $\sec(3\theta) = 2$

9) $2\sin^2 \theta + 3\cos \theta - 3 = 0$

10) Draw a reference triangle given the following:

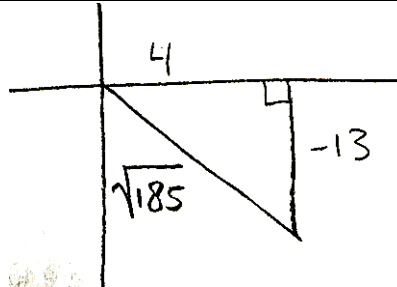
$$\sin \theta = -\frac{3}{11} \quad \tan \theta > 0$$

11) Draw a reference triangle given the following:

$$\cos^{-1} \left(-\frac{4}{13} \right)$$

12) Find the exact value of the expression $\tan\left(\cos^{-1}\left(-\frac{3}{5}\right) + \sin^{-1}\left(\frac{5}{13}\right)\right)$.

Use the reference triangle to the right on problems 13 and 14.



13) $\cos(2\theta)$

14) $\cot(2\theta)$

15) Use a half-angle formula to find the exact value of the expression.

$$\sin\left(\frac{7\pi}{8}\right)$$

16) Use a half-angle formula to find the exact value of the expression.

$$\cot\left(\frac{17\pi}{8}\right)$$

17) Find the exact value of the expression using Sum and Difference formulas.

$$\sec\left(\frac{13\pi}{12}\right)$$

18) Find the exact value of the expression using Sum and Difference formulas.

$$\tan\left(\frac{17\pi}{12}\right)$$