Accel Precalc Practice Worksheet #4: Sum and Difference Formulas   Name _____
Unit #7: Trig Identities and Equations   for Sine, Cosine, and Tangent

I.   Find the exact value for each under the specified conditions.

1.   If $\sin\theta = \dfrac{1}{3}$, θ in quad II, find

a) $\sin\left(\theta + \dfrac{\pi}{6}\right)$

b) $\cos\left(\theta - \dfrac{\pi}{3}\right)$

c) $\tan\left(\theta + \dfrac{\pi}{4}\right)$

2.   If $\cos\theta = \dfrac{1}{4}$, θ in quad IV, find

a) $\sin\left(\theta - \dfrac{\pi}{6}\right)$

b) $\cos\left(\theta + \dfrac{\pi}{3}\right)$

c) $\tan\left(\theta - \dfrac{\pi}{4}\right)$

II.   Establish each identity.

3. $\sin\left(\dfrac{\pi}{2} + \theta\right) = \cos\theta$

4. $\cos(\pi - \theta) = -\cos\theta$

5. $\tan(2\pi - \theta) = -\tan\theta$

6. $\sin(\alpha + \beta) + \sin(\alpha - \beta) = 2\sin\alpha\cos\beta$

7. $\dfrac{\sin(\alpha + \beta)}{\sin\alpha\cos\beta} = 1 + \cot\alpha\tan\beta$

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