Name: ________________________ Date: __________________

Learning Goal 6.1	Using identities to reduce complexity in expressions and solve equations.

More Questions

Sum and Difference Identities

$\cos(A+B) = \cos A\cos B - \sin A\sin B$ | $\sin(A+B) = \sin A\cos B + \cos A\sin B$

$\cos(A-B) = \cos A\cos B + \sin A\sin B$ | $\sin(A-B) = \sin A\cos B - \cos A\sin B$

$\tan(A+B) = \dfrac{\tan A + \tan B}{1 - \tan A\tan B}$ | $\tan(A-B) = \dfrac{\tan A - \tan B}{1 + \tan A\tan B}$

1. Verify the identity $\sin(A+B) = \sin A\cos B + \cos A\sin B$ numerically, without a calculator, for
$$\measuredangle A = \frac{\pi}{2} \quad \text{and} \quad \measuredangle B = \frac{\pi}{6}.$$

2. Express the following as a trigonometric function of a single angle.
$$\sin\left(\frac{\pi}{2}\right)\cos\left(\frac{\pi}{8}\right) - \cos\left(\frac{\pi}{2}\right)\sin\left(\frac{\pi}{8}\right)$$

3. Simplify and then give an exact value for each expression.

a. $\cos 108^\circ \cos 18^\circ + \sin 108^\circ \sin 18^\circ$

b. $$\frac{\tan\left(\frac{5\pi}{6}\right) - \tan\left(\frac{\pi}{3}\right)}{1 + \tan\left(\frac{5\pi}{6}\right)\tan\left(\frac{\pi}{3}\right)}$$

4. Simplify $\cos(x+\pi)$.

5. If $\sin A = \dfrac{2}{7}$ and $\cos B = \dfrac{3}{5}$, $\measuredangle A$ is in QII and $\measuredangle B$ is in QIII, find an exact value for $\cos(A-B)$.

6. Determine the exact value of $\tan\left(\dfrac{\pi}{12}\right)$.

Assignment p. 306 # 1(abd), 2(abd), 6, 7, 8(ace), 9, 10, 19, 20(ab) Quiz Next Day!