Name _____

HW 7-6

1. Let $\theta = \frac{\pi}{12}$.

a. Write θ as a sum or difference of angles on the unit circle.

b. Find an exact value for $\sin\theta$.

2. Let $\theta = \frac{11\pi}{12}$.

a. Write θ as a sum or difference of angles on the unit circle.

b. Find an exact value for $\cos\theta$.

3. Write an equivalent expression for $\cos(2\theta)$ using sine and cosine. (Hint: can you write the double angle 2θ as the sum of two angles?)

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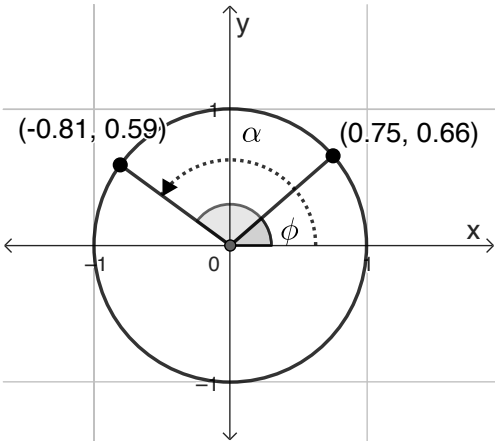
4. Solve the equation $\cos(2w) + 2\sin^2 w = -\sin w$ for $0 \leq w \leq 2\pi$. Show the steps that justify your method.

5. Find $\sin(\alpha + \phi)$.



6. If $\sin\left(\theta + \frac{\pi}{3}\right) = \frac{\sqrt{6}}{4} + \frac{\sqrt{2}}{4}$, find $\cos\theta$.

7. The graph of $y = 2\sin x \cos x$ will look like

A) The graph of $y = \sin x$ with a vertical stretch by a factor of 2

B) The graph of $y = \csc x$

C) The graph of $y = \cos x$ with a horizontal stretch by a factor of 2

D) The graph of $y = \sin x$ with a horizontal shrink by a factor of $\frac{1}{2}$

8. An angle of $\frac{\pi}{3}$ is on the unit circle. However, $\frac{\pi}{3}$ is also double the angle $\frac{\pi}{6}$. Use the double angle formula to show that $\sin(\frac{\pi}{3}) = \frac{\sqrt{3}}{2}$.