

3.12B Equivalent Representations of Trig Functions

AP Precalculus

Name: _____

CA #1

Find the exact value of the sum or difference.

1. $\sin\left(\frac{3\pi}{4} - \frac{5\pi}{3}\right)$

2. $\cos\left(\frac{\pi}{2} + \frac{4\pi}{3}\right)$

3. $\cos\left(\pi - \frac{7\pi}{6}\right)$

4. $\sin\left(\frac{7\pi}{4} - \frac{\pi}{6}\right)$

Simplify the following.

5. $\sin\left(x - \frac{4\pi}{3}\right)$

6. $\cos\left(\frac{3\pi}{2} + \theta\right)$

7. $\cos(x - \pi)$

Use trig identities to solve the trig equations for $0 \leq x \leq 2\pi$. Find exact values.

8. $\cos(2x) = -\sin^2 x$

9. $\cos(2x) \sec^2 x = 0$

10. $\sin(2x) - \cos x = 0$

Answers to 3.12B CA #1

1. $\frac{\sqrt{2}-\sqrt{6}}{4}$	2. $\frac{\sqrt{3}}{2}$	3. $\frac{\sqrt{3}}{2}$
4. $\frac{-\sqrt{6}-\sqrt{2}}{4}$	5. $-\frac{1}{2}\sin x + \frac{\sqrt{3}}{2}\cos x$	6. $\sin \theta$
7. $-\cos x$	8. $x = \frac{\pi}{2}, \frac{3\pi}{2}$	
9. $x = \frac{\pi}{4}, \frac{3\pi}{4}, \frac{5\pi}{4}, \frac{7\pi}{4}$	10. $x = \frac{\pi}{6}, \frac{\pi}{2}, \frac{5\pi}{6}, \frac{3\pi}{2}$	