

Student: _____
Date: _____
Time: _____

Instructor: Fred Khoury
Course: Math 2312-1000 Precalculus (Fall - 2015)
Book: Lial: College Algebra and Trigonometry, 4e

Assignment: Quiz Sec 3.4

1. Solve the equation for the interval $[0, 2\pi)$.

$$\cos^2(x) + 2\cos(x) + 1 = 0$$

- ☐ A. $\{\pi\}$
☐ B. $\left\{\frac{\pi}{2}, \frac{3\pi}{2}\right\}$
☐ C. $\{2\pi\}$
☐ D. $\left\{\frac{\pi}{4}, \frac{7\pi}{4}\right\}$

2. Solve the equation for the interval $[0, 2\pi)$.

$$2\sin^2(x) = \sin(x)$$

- ☐ A. $\left\{0, \pi, \frac{\pi}{6}, \frac{5\pi}{6}\right\}$
☐ B. $\left\{\frac{\pi}{6}, \frac{5\pi}{6}\right\}$
☐ C. $\left\{\frac{\pi}{3}, \frac{2\pi}{3}\right\}$
☐ D. $\left\{\frac{\pi}{2}, \frac{3\pi}{2}, \frac{\pi}{3}, \frac{2\pi}{3}\right\}$

3. Solve the equation for the interval $[0, 2\pi)$.

$$\cos(x) = \sin(x)$$

- ☐ A. $\left\{\frac{\pi}{4}, \frac{7\pi}{4}\right\}$
☐ B. $\left\{\frac{3\pi}{4}, \frac{5\pi}{4}\right\}$
☐ C. $\left\{\frac{\pi}{4}, \frac{5\pi}{4}\right\}$
☐ D. $\left\{\frac{3\pi}{4}, \frac{7\pi}{4}\right\}$

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4. Solve the equation for the interval $[0, 2\pi)$.

$$\sec^2(x) - 2 = \tan^2(x)$$

- ☐ A. \emptyset
- ☐ B. $\left\{\frac{\pi}{6}\right\}$
- ☐ C. $\left\{\frac{\pi}{3}\right\}$
- ☐ D. $\left\{\frac{\pi}{4}\right\}$

5. Solve the equation for the interval $[0, 2\pi)$.

$$\tan(x) + \sec(x) = 1$$

- ☐ A. $\left\{\frac{5\pi}{4}\right\}$
- ☐ B. \emptyset
- ☐ C. $\{0\}$
- ☐ D. $\left\{\frac{\pi}{4}\right\}$

6. Solve the equation in the interval $[0^\circ, 360^\circ)$.

$$\csc(\theta) = 1 + \cot(\theta)$$

- ☐ A. \emptyset
- ☐ B. $\{90^\circ\}$
- ☐ C. $\{270^\circ\}$
- ☐ D. $\{90^\circ, 270^\circ\}$

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7. Solve the equation in the interval $[0^\circ, 360^\circ)$.

$$2 \tan (\theta) + 2 \sin (\theta) - 2 \tan ^2(\theta) \sin (\theta) = 0$$

- ☐ A. \emptyset
☐ B. $\{60^\circ, 300^\circ\}$
☐ C. $\{0^\circ, 180^\circ\}$
☐ D. $\{0^\circ, 60^\circ, 180^\circ, 300^\circ\}$

8. Solve the equation in the interval $[0^\circ, 360^\circ)$. Round to the nearest tenth as needed.

$$2 \cos (2\theta) + 7 \sin (\theta) = 5$$

- ☐ A. \emptyset
☐ B. $\{30^\circ, 330^\circ\}$
☐ C. $\{30^\circ, 210^\circ\}$
☐ D. $\{90^\circ, 48.6^\circ, 131.4^\circ\}$

9. Determine the solution set of each equation in radians (for x) or degrees (for θ) to the nearest tenth as appropriate.

$$\cos ^2(x) + 2 \cos (x) = -1$$

- ☐ A. $\left\{\frac{\pi}{2} + n\pi, 2n\pi\right\}$
☐ B. $\{2n\pi\}$
☐ C. $\{\pi + 2n\pi\}$
☐ D. $\{n\pi\}$

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10. Solve the equation for solutions in the interval $[0, 2\pi)$.

$$\sqrt{2} \cos(2x) = 1$$

- ☐ A. $\left\{ \frac{\pi}{8}, \frac{9\pi}{8}, \frac{7\pi}{8}, \frac{15\pi}{8} \right\}$
- ☐ B. \emptyset
- ☐ C. $\left\{ \frac{\pi}{4}, \frac{3\pi}{4}, \frac{5\pi}{4}, \frac{7\pi}{4} \right\}$
- ☐ D. $\left\{ 0, \frac{2\pi}{3}, \pi, \frac{4\pi}{3} \right\}$