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

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

○A. $\{\pi\}$

○B. $\left\{\dfrac{\pi}{2}, \dfrac{3\pi}{2}\right\}$

○C. $\{2\pi\}$

○D. $\left\{\dfrac{\pi}{4}, \dfrac{7\pi}{4}\right\}$

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

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

○A. $\left\{0, \pi, \dfrac{\pi}{6}, \dfrac{5\pi}{6}\right\}$

○B. $\left\{\dfrac{\pi}{6}, \dfrac{5\pi}{6}\right\}$

○C. $\left\{\dfrac{\pi}{3}, \dfrac{2\pi}{3}\right\}$

○D. $\left\{\dfrac{\pi}{2}, \dfrac{3\pi}{2}, \dfrac{\pi}{3}, \dfrac{2\pi}{3}\right\}$

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

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

○A. $\left\{\dfrac{\pi}{4}, \dfrac{7\pi}{4}\right\}$

○B. $\left\{\dfrac{3\pi}{4}, \dfrac{5\pi}{4}\right\}$

○C. $\left\{\dfrac{\pi}{4}, \dfrac{5\pi}{4}\right\}$

○D. $\left\{\dfrac{3\pi}{4}, \dfrac{7\pi}{2}\right\}$

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

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

- A. $\varnothing$

- B. $\left\{\dfrac{\pi}{6}\right\}$

- C. $\left\{\dfrac{\pi}{3}\right\}$

- D. $\left\{\dfrac{\pi}{4}\right\}$

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

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

- A. $\left\{\dfrac{5\pi}{4}\right\}$

- B. $\varnothing$

- C. $\{0\}$

- D. $\left\{\dfrac{\pi}{4}\right\}$

6. Solve the equation in the interval $[0°, 360°)$.

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

- A. $\varnothing$

- B. $\{90°\}$

- C. $\{270°\}$

- D. $\{90°, 270°\}$

7.　　　Solve the equation in the interval $[0°, 360°)$.

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

A. $\varnothing$

B. $\{60°, 300°\}$

C. $\{0°, 180°\}$

D. $\{0°, 60°, 180°, 300°\}$

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

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

A. $\varnothing$

B. $\{30°, 330°\}$

C. $\{30°, 210°\}$

D. $\{90°, 48.6°, 131.4°\}$

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. $\left\{ \dfrac{\pi}{2} + n\pi, \; 2n\pi \right\}$

B. $\{2n\pi\}$

C. $\{\pi + 2n\pi\}$

D. $\{n\pi\}$

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

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

A. $\left\{ \dfrac{\pi}{8}, \dfrac{9\pi}{8}, \dfrac{7\pi}{8}, \dfrac{15\pi}{8} \right\}$

B. $\varnothing$

C. $\left\{ \dfrac{\pi}{4}, \dfrac{3\pi}{4}, \dfrac{5\pi}{4}, \dfrac{7\pi}{4} \right\}$

D. $\left\{ 0, \dfrac{2\pi}{3}, \pi, \dfrac{4\pi}{3} \right\}$