

More Review Unit 5 Online Learning

Date _____ Period _____

Solve each equation for $0 \leq \theta < 2\pi$.

1) $4 - \frac{1}{3} \cdot \cot \theta = \frac{12 + \sqrt{3}}{3}$

A) $\left\{ \frac{5\pi}{6}, \frac{11\pi}{6} \right\}$

B) $\left\{ \frac{7\pi}{4} \right\}$

C) $\left\{ \frac{3\pi}{4}, \frac{7\pi}{4}, \frac{11\pi}{6} \right\}$

D) $\left\{ \frac{3\pi}{4}, \frac{5\pi}{6}, \frac{7\pi}{4} \right\}$

2) $\frac{5 - \sqrt{2}}{5} = 1 - \frac{1}{5} \cdot \sin \theta$

A) $\left\{ \frac{\pi}{2}, \frac{3\pi}{4} \right\}$

B) $\left\{ 0, \frac{\pi}{2} \right\}$

C) $\left\{ 0, \frac{3\pi}{4} \right\}$

D) No solution.

Verify each identity.

3) $\frac{\sin x}{\cos^2 x} = \tan x \sec x$

4) $\sec x \tan x \cot^2 x = \frac{1}{\sin x}$

$$5) \frac{\sin x}{\sec x} = \frac{\cos x}{\csc x}$$

Solve each equation for $0 \leq \theta < 2\pi$.

$$6) 5\cos^2 \theta = 3 + \cos^2 \theta$$

$$A) \left\{ \frac{\pi}{6}, \frac{11\pi}{6} \right\}$$

$$B) \left\{ \frac{\pi}{6}, \frac{5\pi}{6}, \frac{7\pi}{6}, \frac{11\pi}{6} \right\}$$

$$C) \left\{ \frac{5\pi}{6}, \frac{7\pi}{6}, \frac{5\pi}{4}, \frac{3\pi}{2} \right\}$$

$$D) \left\{ \frac{\pi}{6}, \frac{5\pi}{6}, \frac{11\pi}{6} \right\}$$

$$7) 3 = 4 - 3\cot^2 \theta$$

$$A) \left\{ \frac{\pi}{3}, \frac{2\pi}{3}, \frac{4\pi}{3}, \frac{5\pi}{3} \right\}$$

$$B) \left\{ \frac{\pi}{3}, \frac{2\pi}{3}, \frac{4\pi}{3}, \frac{3\pi}{2}, \frac{5\pi}{3}, \frac{11\pi}{6} \right\}$$

$$C) \left\{ \frac{2\pi}{3}, \frac{5\pi}{3}, \frac{11\pi}{6} \right\}$$

$$D) \left\{ \frac{\pi}{2}, \frac{3\pi}{2} \right\}$$

$$8) \csc \theta \sec \theta - 2 \csc \theta = -\sqrt{2} \csc \theta - 2 \csc \theta$$

- A) $\left\{ \frac{3\pi}{4}, \frac{5\pi}{4} \right\}$ B) $\left\{ \frac{\pi}{4}, \frac{7\pi}{4} \right\}$
 C) $\{0\}$ D) $\left\{ \frac{5\pi}{4} \right\}$

$$9) \tan \theta = -\sqrt{3} \csc \theta \tan \theta + 3 \csc \theta + \tan \theta$$

- A) $\left\{ \frac{\pi}{3}, \frac{4\pi}{3} \right\}$ B) $\left\{ \frac{\pi}{6}, \frac{\pi}{3} \right\}$
 C) $\left\{ \frac{\pi}{2}, \frac{2\pi}{3}, \frac{3\pi}{2}, \frac{5\pi}{3} \right\}$ D) $\left\{ \frac{2\pi}{3}, \frac{4\pi}{3} \right\}$

$$10) 1 = -2 \sin \theta - \sin^2 \theta$$

- A) $\left\{ \frac{\pi}{3}, \frac{3\pi}{2} \right\}$ B) $\left\{ \frac{7\pi}{6}, \frac{5\pi}{3} \right\}$
 C) $\left\{ \frac{3\pi}{2} \right\}$ D) $\left\{ \frac{2\pi}{3}, \pi, \frac{4\pi}{3} \right\}$

$$11) \sec^2 \theta = \sec \theta - 2 + 2 \sec^2 \theta$$

- A) $\left\{ \frac{\pi}{6}, \frac{4\pi}{3} \right\}$ B) $\left\{ 0, \frac{2\pi}{3}, \frac{4\pi}{3} \right\}$
 C) $\left\{ \frac{\pi}{6}, \frac{\pi}{2}, \frac{5\pi}{6} \right\}$ D) $\left\{ \frac{3\pi}{4}, \frac{5\pi}{3} \right\}$

$$12) 1 - \sin^2 \theta = -3 \sin^2 \theta - 3 \sin \theta$$

- A) $\left\{ \frac{3\pi}{2}, \frac{11\pi}{6} \right\}$
 B) $\left\{ \frac{7\pi}{6}, \frac{3\pi}{2}, \frac{11\pi}{6} \right\}$
 C) $\left\{ \frac{\pi}{4}, \frac{5\pi}{4} \right\}$
 D) $\left\{ \frac{7\pi}{6}, \frac{3\pi}{2} \right\}$

$$13) 3 + \cot^2 \theta = 3 \csc \theta$$

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

$$14) 0 = 4\sec \theta + 5 + \tan^2 \theta$$

$$\text{A) } \left\{ \frac{\pi}{6}, \frac{5\pi}{6}, \frac{3\pi}{2} \right\}$$

$$\text{B) } \left\{ \frac{2\pi}{3} \right\}$$

$$\text{C) } \left\{ \frac{2\pi}{3}, \frac{4\pi}{3} \right\}$$

$$\text{D) } \left\{ \frac{4\pi}{3} \right\}$$

Verify each identity.

$$15) \tan(\pi + \theta) = \tan \theta$$

$$16) \cos\left(\frac{\pi}{2} - \theta\right) = \sin \theta$$