

Solving Trig Equations WS #4

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Date_____ Period____

Solve each equation for $0 \leq \theta < 360$.

1) $-1 + \sec \theta = \frac{-3 + 2\sqrt{3}}{3}$

2) $-\sqrt{2} = -2\cos \theta$

3) $-2 + \sec \theta = 0$

4) $\frac{-10 + \sqrt{2}}{5} = -2 - \frac{2}{5} \cdot \cos \theta$

$$5) \ 1 + \tan \theta = 1 + 2 \tan \theta$$

$$6) \ 2 + \frac{12}{5} \cdot \cot \theta = \frac{10 + \sqrt{3}}{5} + 3 \cot \theta$$

$$7) \ -3 + 2 \tan \theta = \frac{-9 + \sqrt{3}}{3} + \tan \theta$$

$$8) \ 5 + 3 \cot \theta = 5 + 2 \cot \theta$$

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

9) $\frac{-12 + 2\sqrt{3}}{3} = -4 + \csc \theta$

10) $3 + \sin \theta = \frac{6 - \sqrt{3}}{2}$

11) $-4 - 4\sin \theta = 0$

12) $3 - 4\sec \theta = 7$

$$13) -1 + 4\cos \theta = -1 + \cos \theta$$

$$14) 5 - 3\tan \theta = -\sqrt{3} + 5$$

$$15) -4 + 4\sec \theta = -8 + 2\sec \theta$$

$$16) 5 - 6\cot \theta = 2\sqrt{3} + 5$$

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Solve each equation for $0 \leq \theta < 360$.

1) $-1 + \sec \theta = \frac{-3 + 2\sqrt{3}}{3}$

 $\{30, 330\}$

2) $-\sqrt{2} = -2\cos \theta$

 $\{45, 315\}$

3) $-2 + \sec \theta = 0$

 $\{60, 300\}$

4) $\frac{-10 + \sqrt{2}}{5} = -2 - \frac{2}{5} \cdot \cos \theta$

 $\{135, 225\}$

$$5) \ 1 + \tan \theta = 1 + 2 \tan \theta$$

$$\{0, 180\}$$

$$6) \ 2 + \frac{12}{5} \cdot \cot \theta = \frac{10 + \sqrt{3}}{5} + 3 \cot \theta$$

$$\{120, 300\}$$

$$7) \ -3 + 2 \tan \theta = \frac{-9 + \sqrt{3}}{3} + \tan \theta$$

$$\{30, 210\}$$

$$8) \ 5 + 3 \cot \theta = 5 + 2 \cot \theta$$

$$\{90, 270\}$$

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

9) $\frac{-12 + 2\sqrt{3}}{3} = -4 + \csc \theta$

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

10) $3 + \sin \theta = \frac{6 - \sqrt{3}}{2}$

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

11) $-4 - 4\sin \theta = 0$

$$\left\{ \frac{3\pi}{2} \right\}$$

12) $3 - 4\sec \theta = 7$

$$\{\pi\}$$

$$13) -1 + 4\cos \theta = -1 + \cos \theta$$

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

$$14) 5 - 3\tan \theta = -\sqrt{3} + 5$$

$$\left\{ \frac{\pi}{6}, \frac{7\pi}{6} \right\}$$

$$15) -4 + 4\sec \theta = -8 + 2\sec \theta$$

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

$$16) 5 - 6\cot \theta = 2\sqrt{3} + 5$$

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