TRIGONOMETRY Name_____

Solving Trig Equations WS #3

Date_____ Period____

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

1) $-2\sec\theta = -6 + \sec\theta$

2) $2 - 9\cot\theta = -3\sqrt{3} + 2$

3) $-5\tan\theta = 3 - 2\tan\theta$

4) $4\sqrt{3} + 4 + \csc\theta = 4 + 7\csc\theta$

5) $4 + 5\csc\theta = 2\sqrt{2} + 4 + 3\csc\theta$

6) $4 - \tan\theta = \frac{12 - \sqrt{3}}{3} - 2\tan\theta$

7) $2 - 2\sin\theta = \sqrt{3} + 2$

8) $-2\sqrt{2} + 4 + \sin\theta = 4 + 5\sin\theta$

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

9) $3 + 2\cos\theta = \frac{6 + \sqrt{2}}{2} + \cos\theta$

10) $-\frac{5}{2} \cdot \cot\theta = \frac{1}{2} - 3\cot\theta$

11) $-4\sqrt{2} - 3 = -3 + 4\sec\theta$

12) $3 + 3\cot\theta = 3 + \frac{7}{2} \cdot \cot\theta$

13) $2\sqrt{3} - 2 = -2 + 6\cot\theta$

14) $1 + 9\tan\theta = -4\sqrt{3} + 1 - 3\tan\theta$

15) $4 - \frac{7}{2} \cdot \tan\theta = 4 - 3\tan\theta$

16) $3 - 10\sec\theta = 8\sqrt{3} + 3 + 2\sec\theta$

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

1) $-2\sec\theta = -6 + \sec\theta$

{60, 300}

2) $2 - 9\cot\theta = -3\sqrt{3} + 2$

{60, 240}

3) $-5\tan\theta = 3 - 2\tan\theta$

{135, 315}

4) $4\sqrt{3} + 4 + \csc\theta = 4 + 7\csc\theta$

{60, 120}

5) $4 + 5\csc\theta = 2\sqrt{2} + 4 + 3\csc\theta$

$\{45, 135\}$

6) $4 - \tan\theta = \frac{12 - \sqrt{3}}{3} - 2\tan\theta$

$\{150, 330\}$

7) $2 - 2\sin\theta = \sqrt{3} + 2$

$\{240, 300\}$

8) $-2\sqrt{2} + 4 + \sin\theta = 4 + 5\sin\theta$

$\{225, 315\}$

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

9) $3 + 2\cos\theta = \frac{6+\sqrt{2}}{2} + \cos\theta$

$\left\{\frac{\pi}{4}, \frac{7\pi}{4}\right\}$

10) $-\frac{5}{2} \cdot \cot\theta = \frac{1}{2} - 3\cot\theta$

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

11) $-4\sqrt{2} - 3 = -3 + 4\sec\theta$

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

12) $3 + 3\cot\theta = 3 + \frac{7}{2} \cdot \cot\theta$

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

13) $2\sqrt{3} - 2 = -2 + 6\cot\theta$

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

14) $1 + 9\tan\theta = -4\sqrt{3} + 1 - 3\tan\theta$

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

15) $4 - \frac{7}{2} \cdot \tan\theta = 4 - 3\tan\theta$

$\{0, \pi\}$

16) $3 - 10\sec\theta = 8\sqrt{3} + 3 + 2\sec\theta$

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