

Assignment 3.2 - Solving Advanced Trig Equations Date _____ Period _____

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

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

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

3) $-\cot^2 \theta + 4 = 5 - 2\cot \theta$

4) $-1 + 2\tan \theta - \tan^2 \theta = 0$

5) $2\cos \theta + 4\cos^2 \theta = -1 + 3\cos^2 \theta$

6) $\sqrt{3}\cos \theta \tan \theta + 2\cos \theta = -\cos \theta$

7) $5 = -\tan^2 \theta - 2\tan \theta + 4$

8) $3\tan \theta = \sqrt{3}\sec \theta + 3\sec \theta \tan \theta + 3\tan \theta$

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

10) $3\sin^2 \theta = \sin \theta + \sin^2 \theta$

11) $4 + 2\sec^2 \theta = 5\sec^2 \theta$

12) $0 = 1 - \tan^2 \theta$

13) $-\csc \theta + 2 = -\csc^2 \theta + 4$

14) $0 = 3 - 4\cos^2 \theta$

15) $\csc^2 \theta - 4 = -3$

16) $1 + \cos \theta = 2\cos^2 \theta$

17) $2\cos \theta = \cot \theta - \sqrt{2}\cot \theta \cos \theta + 2\cos \theta$

18) $2\sqrt{3}\tan \theta \cos \theta - 2\tan \theta = -5\tan \theta$

$$19) \cos^2 \theta + 5 = 6 - \cos^2 \theta$$

$$20) 2\cot \theta + 2\cot \theta \cos \theta = 3\cot \theta$$

Answers to Assignment 3.2 - Solving Advanced Trig Equations (ID: 1)

$$1) \left\{ \frac{4\pi}{3}, \frac{5\pi}{3} \right\}$$

$$9) \left\{ \frac{\pi}{3}, \frac{4\pi}{3} \right\}$$

$$17) \left\{ \frac{\pi}{4}, \frac{\pi}{2}, \frac{3\pi}{2}, \frac{7\pi}{4} \right\}$$

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

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

$$19) \left\{ \frac{\pi}{4}, \frac{3\pi}{4}, \frac{5\pi}{4}, \frac{7\pi}{4} \right\}$$

$$5) \{ \pi \}$$

$$13) \left\{ \frac{\pi}{6}, \frac{5\pi}{6}, \frac{3\pi}{2} \right\}$$

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

$$15) \left\{ \frac{\pi}{2}, \frac{3\pi}{2} \right\}$$