



Math on the Fly!



NAME: _____ DATE: _____

Solving Trigonometric Equations

Find all angles in radians in the range of $0 \leq x < 2\pi$ for each equation below.

1. $\cos(x) = \frac{1}{2}$

2. $\sin(x) = -\frac{\sqrt{3}}{2}$

3. $\tan(x) = -1$

4. $\cos(x) = 0$

5. $\sin(x) = 1$

6. $\tan(x) = \sqrt{3}$

Find all angles in degrees in the range of $0^\circ \leq x < 360^\circ$ for each equation below.

7. $\cos(x) = \frac{\sqrt{3}}{2}$

8. $\sin(x) = \frac{1}{2}$

9. $\tan(x) = 1$

10. $\cos(x) = -1$

11. $\sin(x) = 0$

12. $\tan(x) = \frac{\sqrt{3}}{3}$

SOLUTIONS

$$1. \quad x = \frac{\pi}{3}, \frac{5\pi}{3}$$

$$2. \quad x = \frac{4\pi}{3}, \frac{5\pi}{3}$$

$$3. \quad x = \frac{3\pi}{4}, \frac{7\pi}{4}$$

$$4. \quad x = \frac{\pi}{2}, \frac{3\pi}{2}$$

$$5. \quad x = \frac{\pi}{2}$$

$$6. \quad x = \frac{\pi}{3}, \frac{4\pi}{3}$$

$$7. \quad x = 30^\circ, 330^\circ$$

$$8. \quad x = 30^\circ, 150^\circ$$

$$9. \quad x = 45^\circ, 225^\circ$$

$$10. \quad x = 180^\circ$$

$$11. \quad x = 0^\circ, 180^\circ$$

$$12. \quad x = 30^\circ, 210^\circ$$