

Name _____

Date _____

Trigonometric Equations - Step-by-Step Lesson

Solve:

$$2 \cos x - 1 = 0; x [0, 2\pi]$$



Explanation:

$$\text{Step 1) } 2 \cos x - 1 = 0$$

$$2 \cos x = 1$$

$$\cos x = \frac{1}{2}$$

Step 2) Now, Cos is positive in Quadrant I and Quadrant IV.

Also, a Cos value of $\frac{1}{2}$ is a reference angle of 60° .

Consider the reference angle of 60° in quadrants I and II.

$$x = 60^\circ \text{ and } 300^\circ \text{ or } \pi/3 \text{ and } 5\pi/3$$

So, the answer is $x = 60^\circ$ and 300° .

