Finding All Solutions of Trigonometric Equations

Name _____

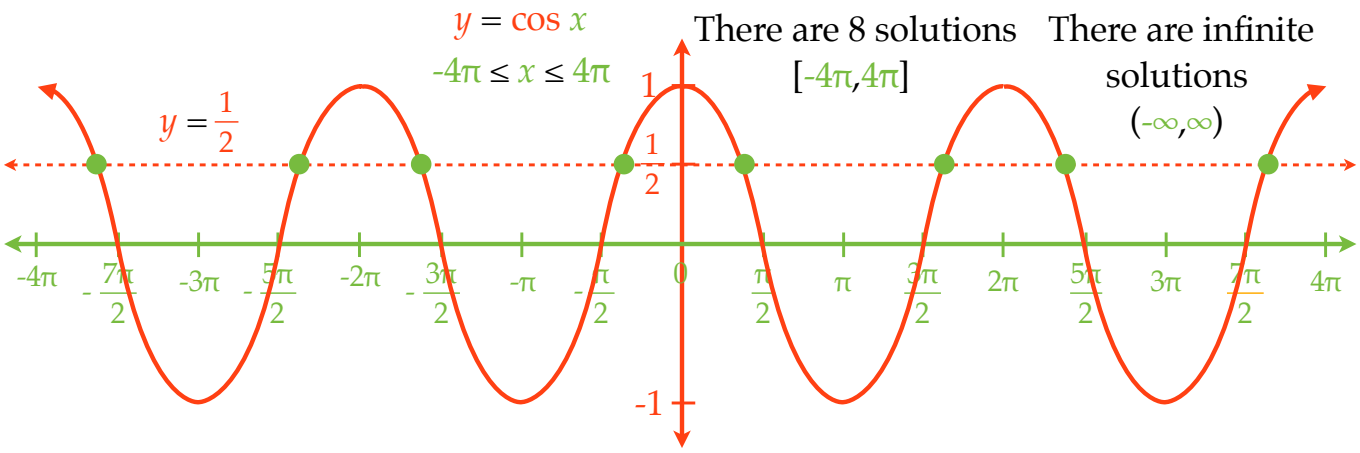
Date _____ Period _____

Determine if the following are solutions to the equation $\cos\theta = \frac{1}{2}$

$\theta = \frac{\pi}{2}$ $\theta = \frac{\pi}{3}$ $\theta = \frac{5\pi}{3}$

The solution to $\cos\theta = \frac{1}{2}$ is any value of θ that makes the equation a true statement.

How many solutions are there to the equation $\cos\theta = \frac{1}{2}$



The solution to $\cos\theta = \frac{1}{2}$ is any value of θ that makes the equation a true statement.

How to express all solutions of the equation $\cos\theta = \frac{1}{2}$

The period of cosine is 2π

Solve the equation $\cos\theta = \frac{1}{2}$, $[0, 2\pi)$

Give all solutions to the equation $\sin\theta = \frac{1}{2}$

The period of sine is 2π

Solve the equation $\sin\theta = \frac{1}{2}$, $[0, 2\pi)$

Give all solutions to the equation $\tan \theta = 1$

The period of tangent is π

Solve the equation $\tan \theta = 1$, $[0,\pi)$

Give all solutions to the equation $\cos \theta = 0$

The period of cosine is 2π

Solve the equation $\cos \theta = 0$, $[0,2\pi)$

Give all solutions to the equation $\sin\theta = -1$

The period of sine is 2π

Solve the equation $\sin\theta = -1$, $[0,2\pi)$

Give all solutions to the equation $\tan\theta = -\frac{\sqrt{3}}{3}$

The period of tan is π

Solve the equation $\tan\theta = -\frac{\sqrt{3}}{3}$, $[0,\pi)$