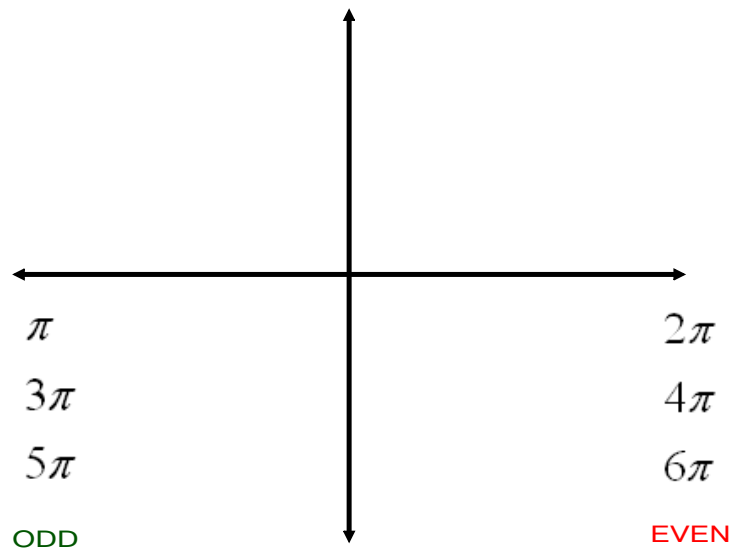


# Remember!



## Warm up

Evaluate without the use of a calculator:

$$\frac{12\pi}{4}, \frac{13\pi}{4}, \frac{14\pi}{4}$$

$3\pi$

$$\cos^2 13\pi/4 - 2 \sin \pi/6$$

$$\left(\frac{-1}{\sqrt{2}}\right)^2 - 2\left(\frac{1}{2}\right)$$

$$\frac{1}{2} - 1$$

$$\boxed{-\frac{1}{2}}$$

Graph the following:

$$y = \underline{2} \sin\left(x - \frac{\pi}{\underline{4}}\right) + \underline{1}$$

$$\left(\frac{x}{k}, y\right) \rightarrow \left(\frac{x}{k} + C, Ay + D\right)$$

A = 2

k = 1

C =  $\frac{\pi}{4}$

D = 1

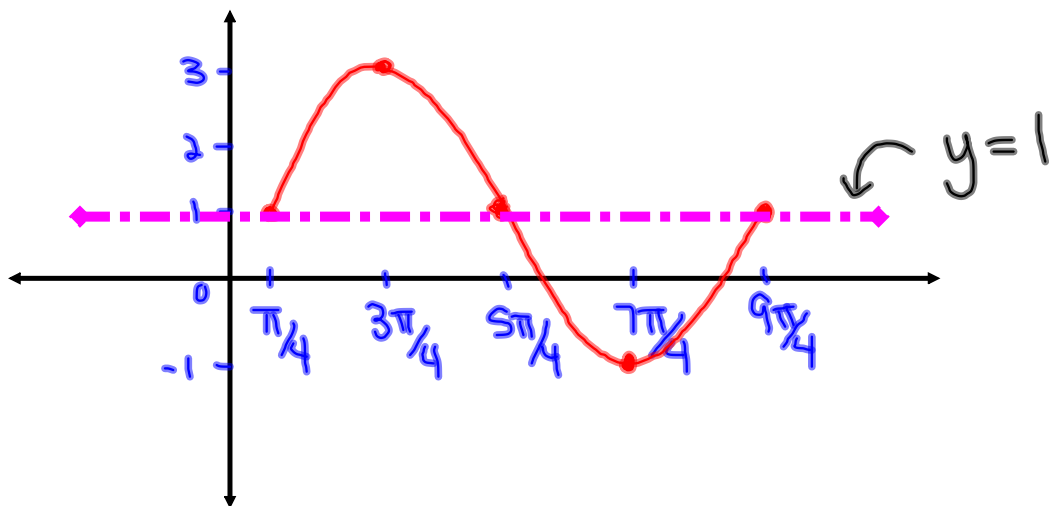
P =  $2\pi$

$$y = \sin x$$

X	y
0	0
$\frac{\pi}{2}$	1
$\pi$	0
$\frac{3\pi}{2}$	-1
$2\pi$	0

New points after mapping

X	y
$\frac{\pi}{4}$	1
$\frac{3\pi}{4}$	3
$\frac{5\pi}{4}$	1
$\frac{7\pi}{4}$	-1
$\frac{9\pi}{4}$	1



## Solving Trigonometric Equations

$$\cos^2 \theta - \frac{1}{2} \cos \theta = 0, \quad 0 \leq \theta \leq 2\pi$$

$$(\cos \theta) \left( \cos \theta - \frac{1}{2} \right) = 0$$

$$\begin{array}{l|l} \cos \theta = 0 & \cos \theta - \frac{1}{2} = 0 \\ \theta = \frac{\pi}{2}, \frac{3\pi}{2} & \cos \theta = \frac{1}{2} \Rightarrow \frac{\pi}{3} \end{array}$$

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

$\pi - \theta$	$\theta$
$\pi + \theta$	$2\pi - \theta$
	$2\pi - \frac{\pi}{3}$
	$\frac{6\pi}{3} - \frac{\pi}{3}$
	$\frac{5\pi}{3}$

## Solving Trigonometric Equations

$\pi - \theta$	$\theta$
$\pi + \theta$	$2\pi - \theta$

$$\sin^2 \theta - \sin \theta = 2 \quad -2\pi \leq \theta \leq 2\pi$$

$$\sin^2 \theta - \sin \theta - 2 = 0$$

$$(\sin \theta + 1)(\sin \theta - 2) = 0$$

$\sin \theta + 1 = 0$		<del><math>\sin \theta - 2 = 0</math></del>	<i>Not Possible</i>
$\sin \theta = -1$		<del><math>\sin \theta = 2</math></del>	

$$\theta = \frac{3\pi}{2}, -\frac{\pi}{2}$$

↑

$$\frac{3\pi}{2} - 2\pi$$

$$\frac{3\pi}{2} - 4\pi$$

## Homework

### Finish worksheet

$$\textcircled{1} \text{ b) } \frac{3y}{3} = \frac{6 \sin\left[2\left(\theta + \frac{\pi}{4}\right)\right] + 3}{3}$$