

Warm-up: Avoiding Horizontal Reflections

Original Equation	New Equation
$y = 2\sin(-x)$	$y = -2\sin(x)$
$y = -2\sin(-x)$	$y = 2\sin(x)$
$y = 2\cos(-x)$	$y = 2\cos(x)$
$y = -2\cos(-x)$	$y = -2\cos(x)$

Next ... factor out the negative in each expression:

$$-x - \pi = -(x + \pi)$$

$$-3\theta + 45^\circ = -(3\theta - 45^\circ)$$

$$-x - \pi/4 = -(x + \frac{\pi}{4})$$

$$-2\theta + 180^\circ = -(2\theta - 180^\circ)$$

Do Not factor out the GCF!

So ... now rewrite these equations to avoid a horizontal reflection!

Original Equation	New Equation
$y = 2\sin(-x - \pi)$	$y = -2\sin(x + \pi)$
$y = -2\sin(-3\theta + 45^\circ)$	$y = 2\sin(3\theta - 45^\circ)$
$y = 2\cos(-x - \pi/4)$	$y = 2\cos(x + \frac{\pi}{4})$
$y = -2\cos(-2\theta + 180^\circ)$	$y = -2\cos(2\theta - 180^\circ)$