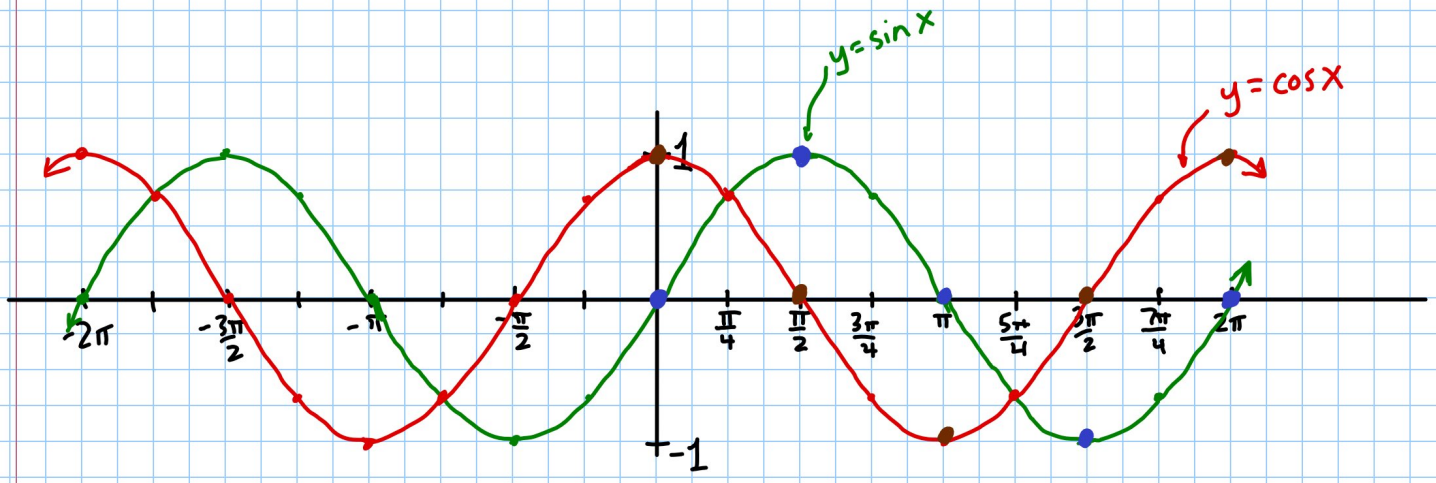
WARMUP - Put your calculator in radian mode and fill in the chart with decimals to the nearest 100^{th}.

Angle, θ	$\sin\theta$	$\cos\theta$
0	0	1
$\frac{\pi}{4}$	0.71	0.71
$\frac{\pi}{2}$	1	0
$\frac{3\pi}{4}$	0.71	-0.71
π	0	-1
$\frac{5\pi}{4}$	-0.71	-0.71
$\frac{3\pi}{2}$	-1	0
$\frac{7\pi}{4}$	-0.71	0.71
2π	0	1



Section 5.4 Graphs of $y=\sin x$ and $y=\cos x$

KEY POINTS of $y=\sin x$: $(0,0), \left(\frac{\pi}{2},1\right), (\pi,0), \left(\frac{3\pi}{2},-1\right), (2\pi,0)$

KEY POINTS of $y=\cos x$: $(0,1), \left(\frac{\pi}{2},0\right), (\pi,-1), \left(\frac{3\pi}{2},0\right), (2\pi,1)$

Characteristics: for $\sin x$ and $\cos x$

$D=(-\infty,\infty)$ $R=[-1,1]$

Period $= 2\pi$

Review:

$f(x-h)$ ⇒ Right h units

$f(x+h)$ ⇒ Left h units

$f(x)+k$ ⇒ Up k units

$f(x)-k$ ⇒ Down k units

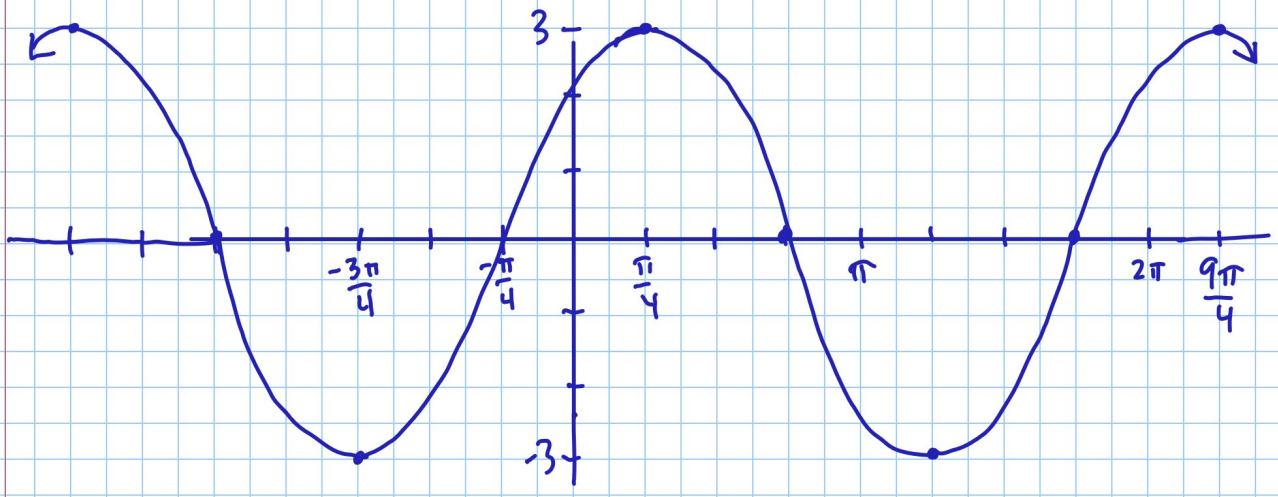
$af(x)$ ⇒ Multiply y by a

ex: $y = 3\cos\left(x - \frac{\pi}{4}\right)$

Right $\frac{\pi}{4}$

Multiply y by 3

	$x+\frac{\pi}{4}$	$y\times 3$
$(0, 1)$	$\frac{\pi}{4}$	3
$(\frac{\pi}{2}, 0)$	$\frac{3\pi}{4}$	0
$(\pi, -1)$	$\frac{5\pi}{4}$	-3
$(\frac{3\pi}{2}, 0)$	$\frac{7\pi}{4}$	0
$(2\pi, 1)$	$\frac{9\pi}{4}$	3



Now try: $y = -2\sin\left(x - \frac{\pi}{2}\right)$