

Practice - Write the transformations:

$$y = -\frac{1}{2} - 3\sin\left(\frac{\pi}{4}x - 2\right)$$

parent: $y = \sin x$ amp = 1
 $\mathcal{P} = 2\pi$
 $\mathcal{P.S.} = -$

1) $y = -\sin x$ \mathcal{R}_x

2) $y = -3\sin x$ v.s. by 3 amp = 3

3) $y = -3\sin\left(\frac{\pi}{4}x\right)$ h.s. by $\frac{\pi}{4}$ $\mathcal{P} = 8$

4) $y = -3\sin\left(\frac{\pi}{4}\left(x - \frac{8}{\pi}\right)\right)$ shift right $\frac{8}{\pi}$ $\mathcal{P.S.} = \frac{8}{\pi}$

5) $y = -\frac{1}{2} - 3\sin\left(\frac{\pi}{4}x - 2\right)$ shift down $\frac{1}{2}$

Practice - Graph using transformations:

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

parent: $y = \cos x$

amp = 1

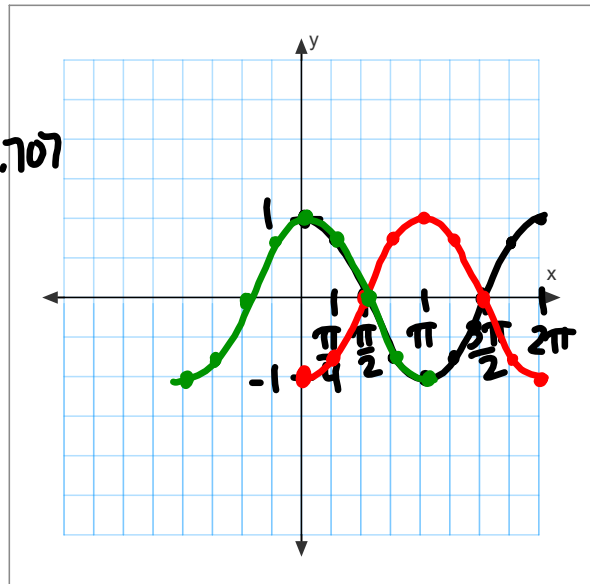
$\mathcal{P} = 2\pi$

$\mathcal{P.S.} = -$

1) $y = -\cos x$ \mathcal{R}_x

2) $y = -\cos(x + \pi)$
 shift left π
 $\mathcal{P.S.} = -\pi$

x	y
0	1
$\frac{\pi}{4}$	$\frac{\sqrt{2}}{2} \approx 0.707$
$\frac{\pi}{2}$	0
$\frac{3\pi}{4}$	$-\frac{\sqrt{2}}{2}$
π	-1
$\frac{5\pi}{4}$	$-\frac{\sqrt{2}}{2}$
$\frac{3\pi}{2}$	0
$\frac{7\pi}{4}$	$\frac{\sqrt{2}}{2}$
2π	1



Practice - Graph using transformations:

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

parent: $y = \csc x$

amp = -

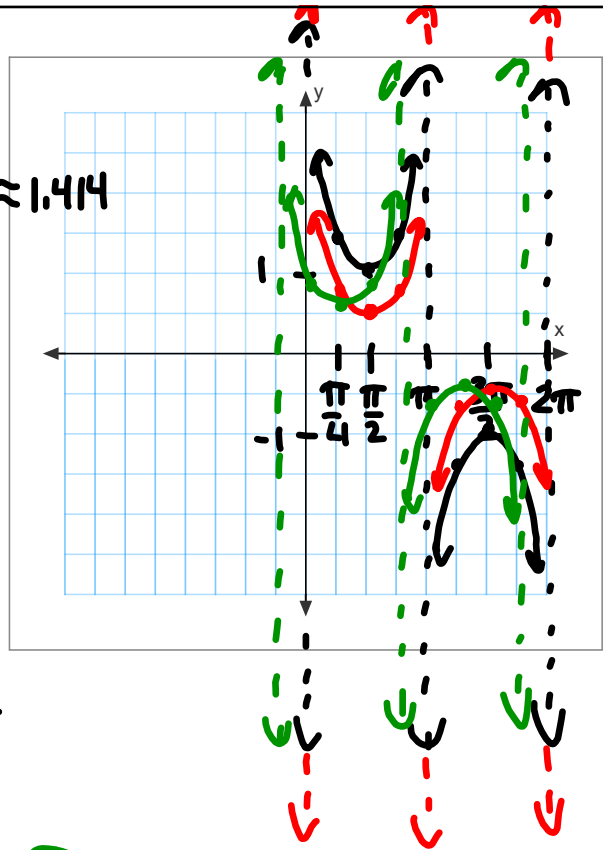
$P = 2\pi$

$P.S. = -$

1) $y = \frac{1}{2} \csc x$ v.c. by $\frac{1}{2}$

2) $y = \frac{1}{2} \csc\left(x + \frac{\pi}{4}\right)$
 shift left $\frac{\pi}{4}$ $P.S. = -\frac{\pi}{4}$

x	y
0	-
$\frac{\pi}{4}$	$\sqrt{2} \approx 1.414$
$\frac{\pi}{2}$	1
$\frac{3\pi}{4}$	$\sqrt{2}$
π	-
$\frac{5\pi}{4}$	$-\sqrt{2}$
$\frac{3\pi}{2}$	-1
$\frac{7\pi}{4}$	$-\sqrt{2}$
2π	-



Assignment:

Complete p.427 #1-20, 33, 35

* Write the problem. You will want to know these properties! *