

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

a: 2

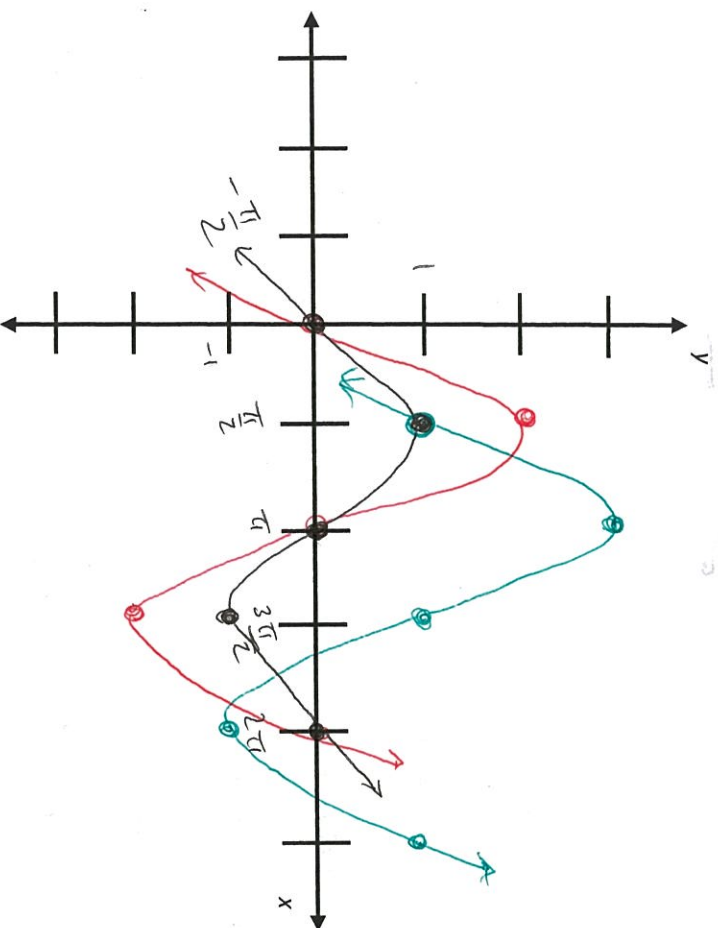
b: 1

P: 2π

R: $\frac{\pi}{2}$

up: 1

Sc: $\frac{\pi}{2}$



Original	"a" shift	"b" shift
$(0, 0)$	$(0, 0)$	$(\frac{\pi}{2}, 1)$
$(\frac{\pi}{2}, 1)$	$(\frac{\pi}{2}, 2)$	$(\pi, 3)$
$(\pi, 0)$	$(\pi, 0)$	$(\frac{3\pi}{2}, 1)$
$(\frac{3\pi}{2}, -1)$	$(\frac{3\pi}{2}, -2)$	$(2\pi, -1)$
$(2\pi, 0)$	$(2\pi, 0)$	$(\frac{5\pi}{2}, 1)$

"normal"

y-values $\cdot (2)$

$\frac{\pi}{2}$ to x -values $+1$ to y -values

Graph it!

— = $\sin x$ ("normal")

— = $2 \sin x$ (amplitude)

— = FINAL (includes $h+k$)

$$y = -\cos 4x + 3$$

NOTE:
first a point!

After, to my is a point

According $(\frac{\pi}{8}, 3)$ $\downarrow$

graph

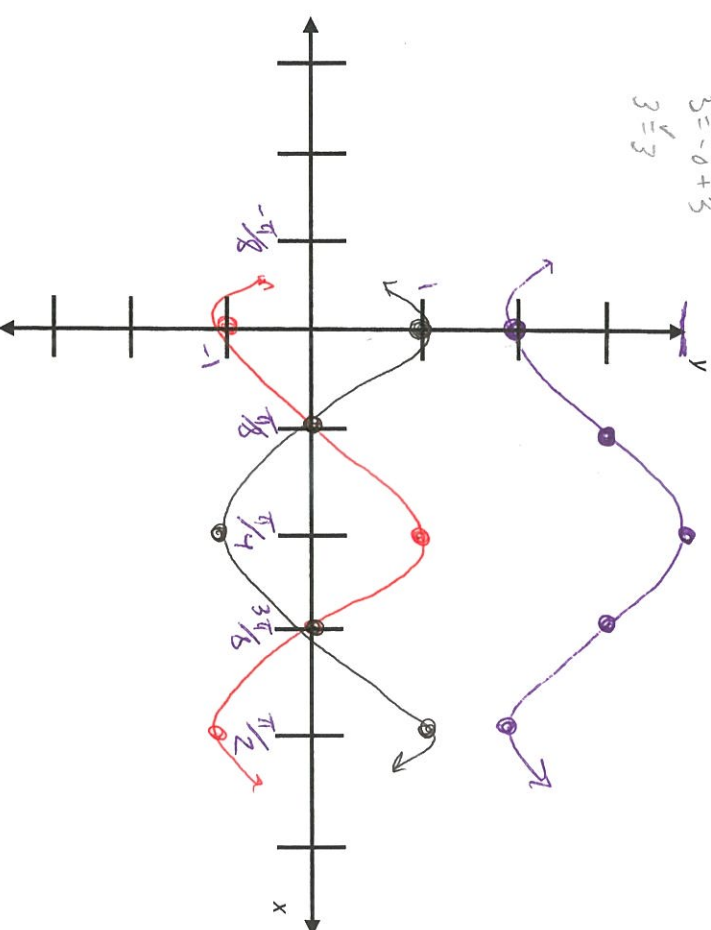
$$y = -\cos 4x + 3$$

$$3 = -\cos(4 \cdot \frac{\pi}{8}) + 3$$

$$3 = -\cos(\frac{\pi}{2}) + 3$$

$$3 = -0 + 3$$

$$3 = 3$$



$$a = -1$$

$$b = 4$$

$$P = \frac{\pi}{2}$$

$$Sc = \frac{\pi}{8}$$

$$h = \text{none } (0)$$

$$k = 3$$

Original	a/b shift	h/k shift
$(0, 1)$	$(0, -1)$	$(0, 2)$
$(\frac{\pi}{2}, 0)$	$(\frac{\pi}{8}, 0)$	$(\frac{\pi}{8}, 3)$
$(\pi, -1)$	$(\frac{\pi}{4}, 1)$	$(\frac{\pi}{4}, 4)$
$(\frac{3\pi}{2}, 0)$	$(\frac{3\pi}{8}, 0)$	$(\frac{3\pi}{8}, 3)$
$(2\pi, 1)$	$(\frac{\pi}{2}, -1)$	$(\frac{\pi}{2}, 2)$

- = "normal" cosine $y = \cos x$ (no scale)
- = reflection + H.C. which scale already shows
- = FINAL (includes k)