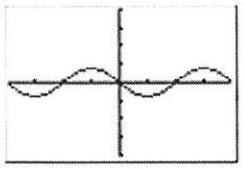
Name: Key

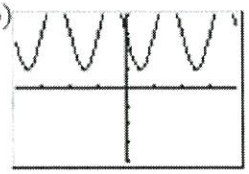
4.4 Practice

For 1-5, match the equation to the correct graph.

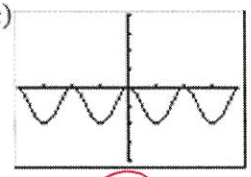
1. $y = -3\sin\left(x + \frac{\pi}{4}\right)$ — amp of 3 + reflected — $\pi/4$
2. $y = 5\cos 2x$ — amp of 5
3. $y = \frac{3}{4}\sin(x - \pi)$ — amp of $3/4$
4. $y = \cos 2(x + \pi) - 1$ — Down 1
5. $y = -2\sin 2x + 3$ — up 3 + flipped

a) 

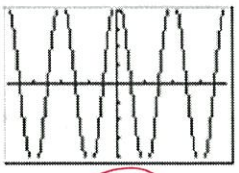
(3)

b) 

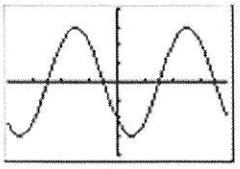
(5)

c) 

(4)

d) 

(2)

e) 

(1)

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

nothing to x's b/c b=1

$(-2)y$ $\quad -\frac{\pi}{2}$ (x) $\quad +1$ (y)

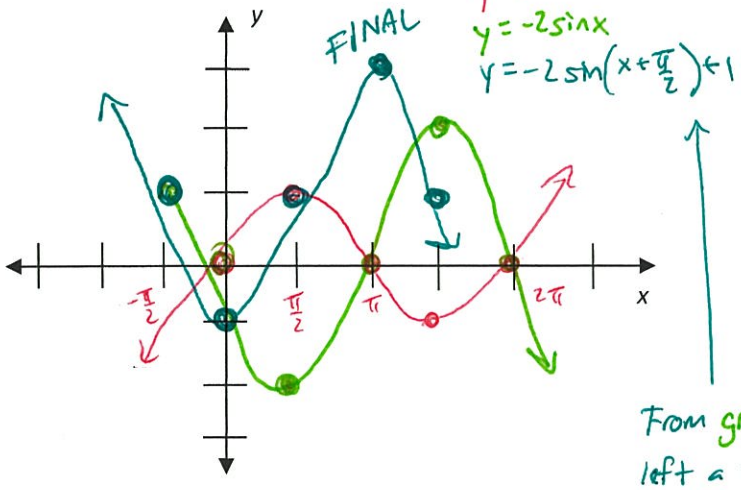
Original	a / b shift	h / k shift
$(0,0)$	$(0,0)$	$(-\frac{\pi}{2}, 1)$
$(\pi/2, 1)$	$(\pi/2, -2)$	$(0, -1)$
$(\pi, 0)$	$(\pi, 0)$	$(\frac{\pi}{2}, 1)$
$(3\pi/2, -1)$	$(\frac{3\pi}{2}, 2)$	$(\pi, 3)$
$(2\pi, 0)$	$(2\pi, 0)$	$(\frac{3\pi}{2}, 1)$

$y = \sin x$

$y = -2\sin x$

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

FINAL



From green left a tick mark, up 1

7) Graph $y = \frac{1}{2}\cos(2x - \pi) + 2$

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

$\frac{1}{2}(x)$ $\quad \frac{1}{2}(y)$ $\quad +\frac{\pi}{2}$ (x) $\quad +2$ (y)

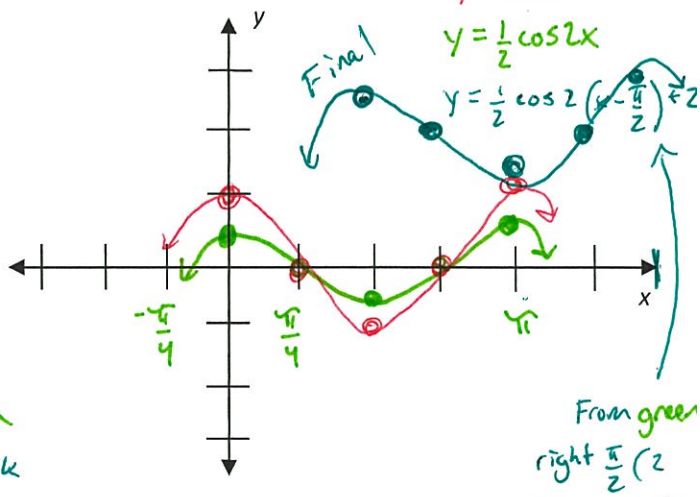
Original	a / b shift	h / k shift
$(0, 1)$	$(0, 1/2)$	$(\frac{\pi}{2}, 5/2)$
$(\pi/2, 0)$	$(\frac{\pi}{4}, 0)$	$(\frac{3\pi}{4}, 2)$
$(\pi, -1)$	$(\frac{\pi}{2}, -1/2)$	$(\pi, 3/2)$
$(3\pi/2, 0)$	$(\frac{3\pi}{4}, 0)$	$(\frac{5\pi}{4}, 2)$
$(2\pi, 1)$	$(\pi, 1/2)$	$(\frac{3\pi}{2}, 5/2)$

$y = \cos x$

$y = \frac{1}{2}\cos 2x$

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

Final



From green right $\frac{\pi}{2}$ (2 tick marks) + up 2