

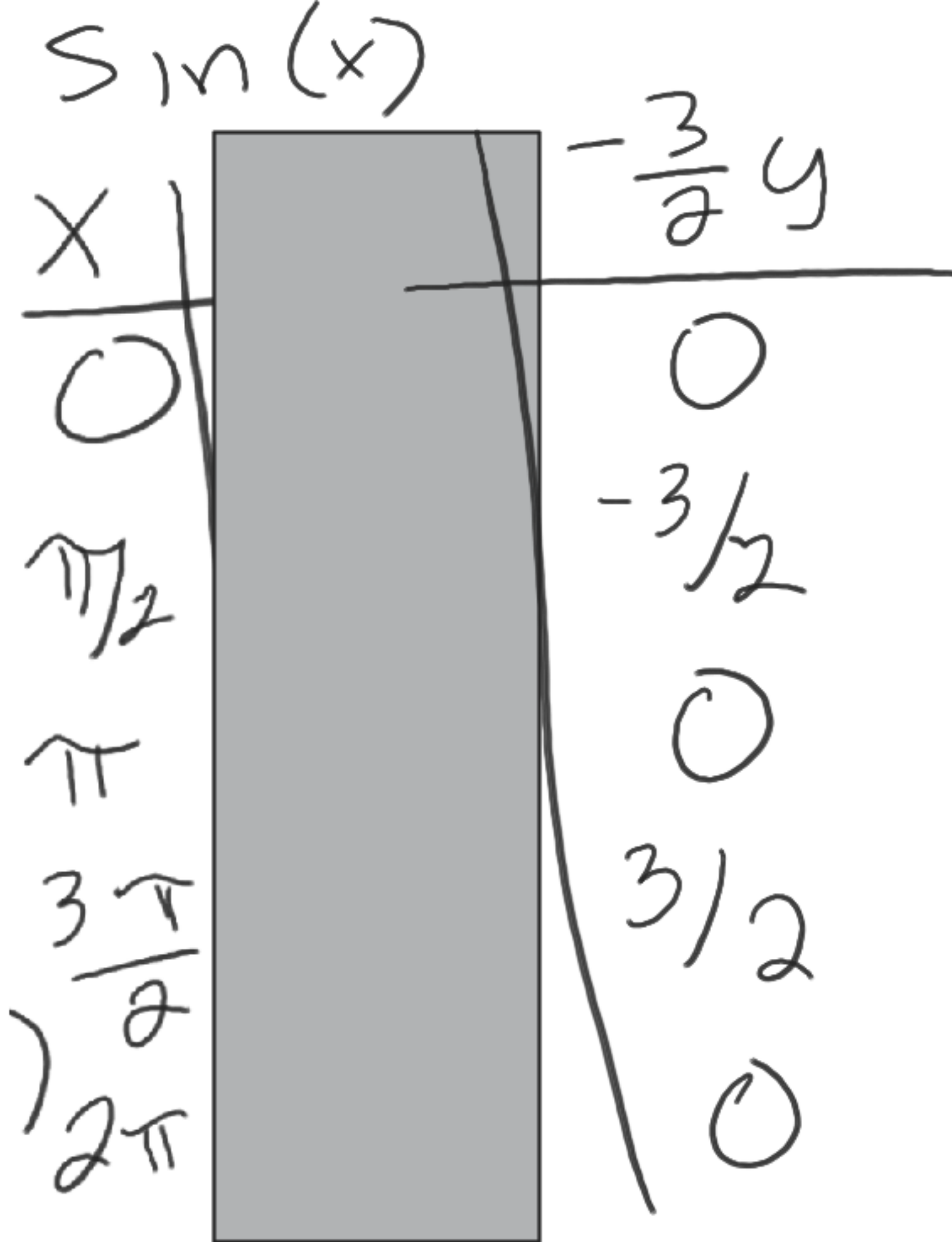
X	Y
0	0
$\frac{\pi}{2}$	1
π	0
$\frac{3\pi}{2}$	-1
2π	0

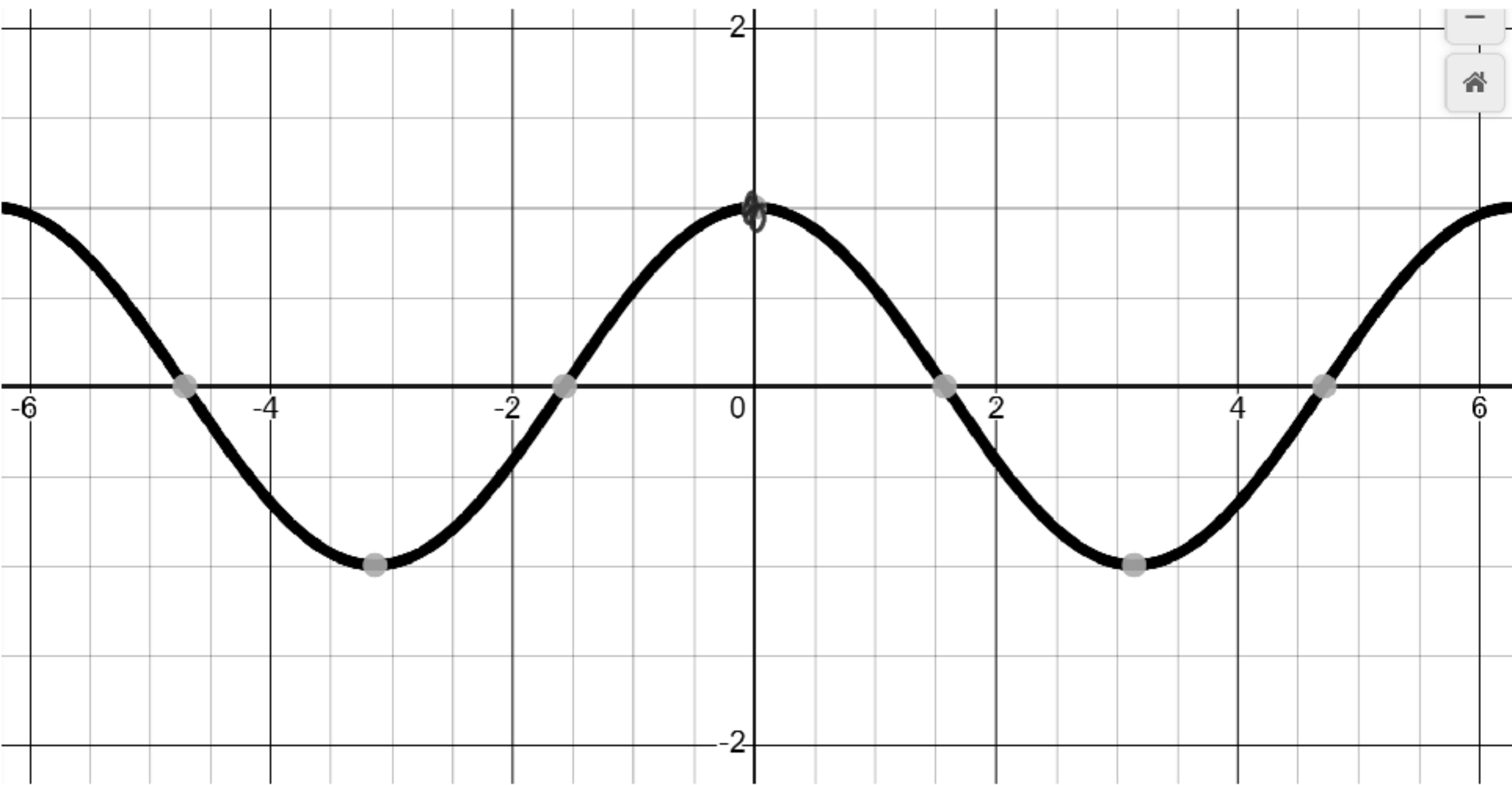
$\sin x \rightarrow 2\pi$ period

Graph the trigonometric function.

$$y = -\frac{3}{2}(\sin x)$$

Amplitude
 $\frac{3}{2}$





x	y
0	1
$\frac{\pi}{2}$	0
π	-1
$\frac{3\pi}{2}$	0
2π	1

cos x

Graph the trigonometric function.

$$y = \cos\left(\frac{3}{4}x\right)$$

\uparrow
b

Period

$$\frac{1}{b} 2\pi$$

$$\frac{2\pi}{3} = \frac{4\pi}{6}$$

$$\frac{4\pi}{3}$$

$$2\pi = \frac{12\pi}{6}$$

$$\frac{8\pi}{3}$$

$\frac{4}{3}x$

0

y

1

0

-1

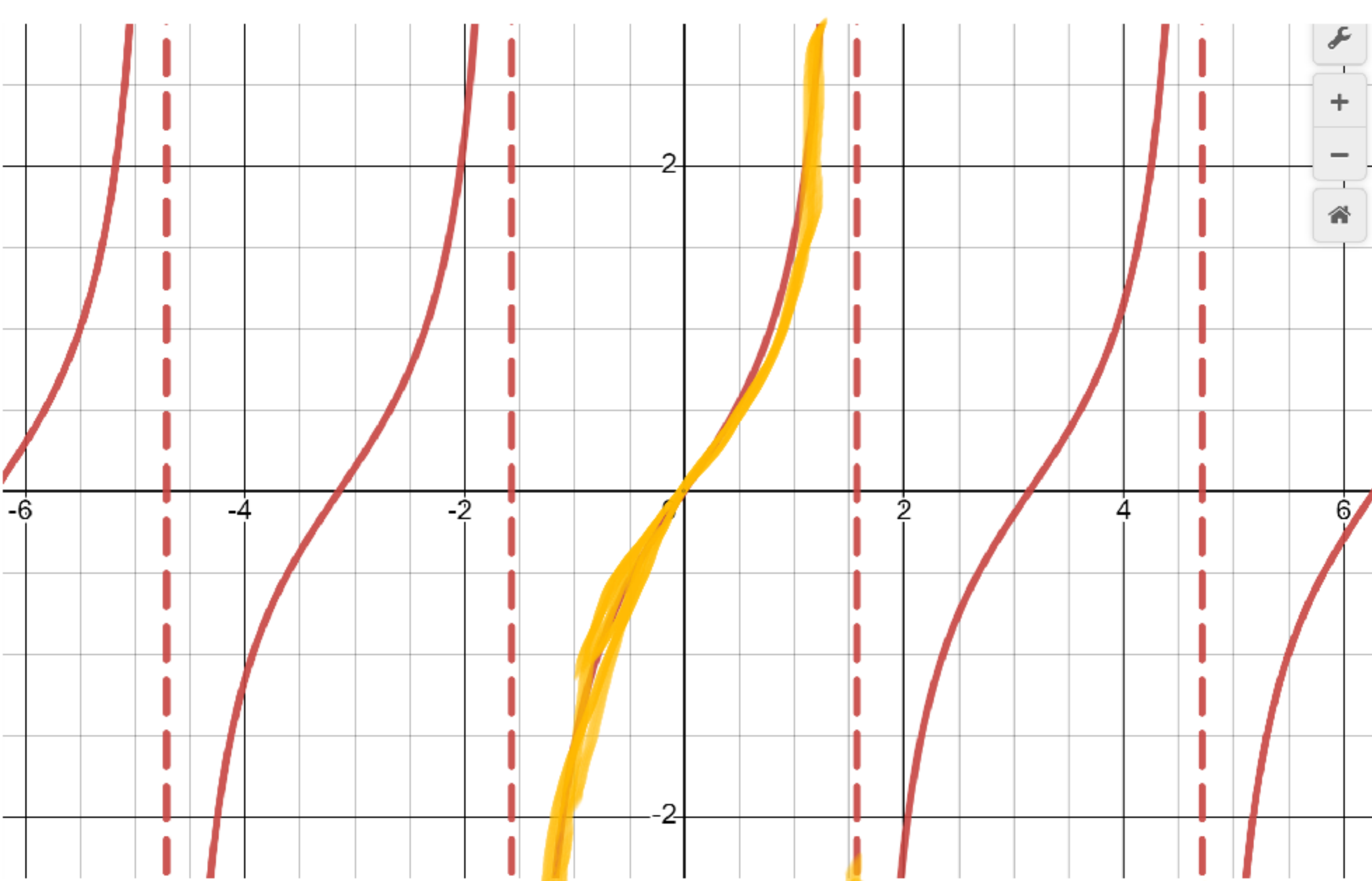
0

-1

Graph the trigonometric function.

$$y = 3 \cos\left(\frac{3}{4}x\right)$$

$\frac{4}{3}X$	X	Y	3Y
0	0	1	3
$\frac{2\pi}{3}$	$\frac{\pi}{2}$	0	0
$4\pi/3$	π	-1	-3
2π	$\frac{3\pi}{2}$	0	0
$8\pi/3$	2π	1	3



Tan x

x	y
-	und
$\frac{\pi}{2}$	
π	0
$\frac{3\pi}{2}$	
2π	und

$$y = -3 \tan\left(\frac{2}{3}x\right)$$

$\frac{3}{2}x$	x	y	$-3y$
$-\frac{3\pi}{4}$	$-\frac{\pi}{2}$	und	und
$-\frac{3\pi}{8}$	$-\frac{\pi}{4}$	1	3
0	0	0	0
$\frac{3\pi}{8}$	$\frac{\pi}{4}$	-1	-3
$\frac{3\pi}{4}$	$\frac{\pi}{2}$	und	und

Trig Function T-Charts

$$y = \sin(x)$$

x	y
0	0
$\frac{\pi}{2}$	1
π	0
$\frac{3\pi}{2}$	-1
2π	0

$$y = \cos(x)$$

x	y
0	1
$\frac{\pi}{2}$	0
π	-1
$\frac{3\pi}{2}$	0
2π	1

$$y = \tan(x)$$

x	y
$-\frac{\pi}{2}$	undef
$-\frac{\pi}{4}$	-1
0	0
$\frac{\pi}{4}$	1
$\frac{\pi}{2}$	undef

$$y = \csc(x)$$

x	y
0	undef
$\frac{\pi}{2}$	1
π	undef
$\frac{3\pi}{2}$	-1
2π	undef

$$y = \sec(x)$$

x	y
0	1
$\frac{\pi}{2}$	undef
π	-1
$\frac{3\pi}{2}$	undef
2π	1

$$y = \cot(x)$$

x	y
0	undef
$\frac{\pi}{4}$	1
$\frac{\pi}{2}$	0
$\frac{3\pi}{4}$	-1
π	undef

$$y = -\cos(x) + 3.$$

x	y	$-y$	$= y + 3$
0	1	-1	2
$\frac{\pi}{2}$	0	0	3
π	-1	-1	4
$\frac{3\pi}{2}$	0	0	3
2π	1	-1	2

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

Phase Shift

$x + \frac{2\pi}{3}$	X	Y	3y
$2\pi/3$	0	1	3
$7\pi/6$	$\frac{\pi}{2}$	0	0
$5\pi/3$	π	-1	-3
$13\pi/6$	$\frac{3\pi}{2}$	0	0
$8\pi/3$	2π	1	3

$$-2 \sin\left(\frac{1}{2}x - \frac{\pi}{4}\right) + 1.$$

$$\left(\frac{1}{2}\left(x - \frac{\pi}{2}\right)\right)$$

$2x + \frac{\pi}{2}$	$2x$	x	y	$-2y + 1$
$\frac{\pi}{2}$	0	0	0	1
$3\frac{\pi}{2}$	π	$\frac{\pi}{2}$	1	-1
$5\frac{\pi}{2}$	2π	π	0	1
$7\frac{\pi}{2}$	3π	$\frac{3\pi}{2}$	-1	3
$9\frac{\pi}{2}$	4π	2π	0	1

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

$$\text{Period} \rightarrow \frac{1}{b} 2\pi = 2(2\pi) \\ = 4\pi$$

$$y = a \sin(bx + c) + d$$

$$\text{amplitude} \rightarrow |a| = |-2| \\ = 2$$

$$\left. \begin{array}{l} \text{vertical shift} = d \\ = 1 \end{array} \right\} \text{phase shift} \rightarrow \frac{-c}{b} = \frac{\pi/4}{1/2} \\ = \pi/2$$

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

	$y = \cot(x)$		
$x \rightarrow \frac{\pi}{4}$	x	y	$-\frac{3}{2}y$
$\frac{\pi}{4}$	0	undef	undef
$\frac{\pi}{2}$	$\frac{\pi}{4}$	1	$-\frac{3}{2}$
$\frac{3\pi}{4}$	$\frac{\pi}{2}$	0	0
π	$\frac{3\pi}{4}$	-1	$\frac{3}{2}$
$\frac{5\pi}{4}$	π	undef	undef