January 21, 2022

TRIG GRAPHS

Periodic Functions

$y = \sin x$

$\sin x$ starts on horiz axis & moves upward

$\cos x$ starts at a peak & moves downward.

$y = a \sin(bx)$

amplitude $|a|$

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

amplitude – max distance from the horiz axis

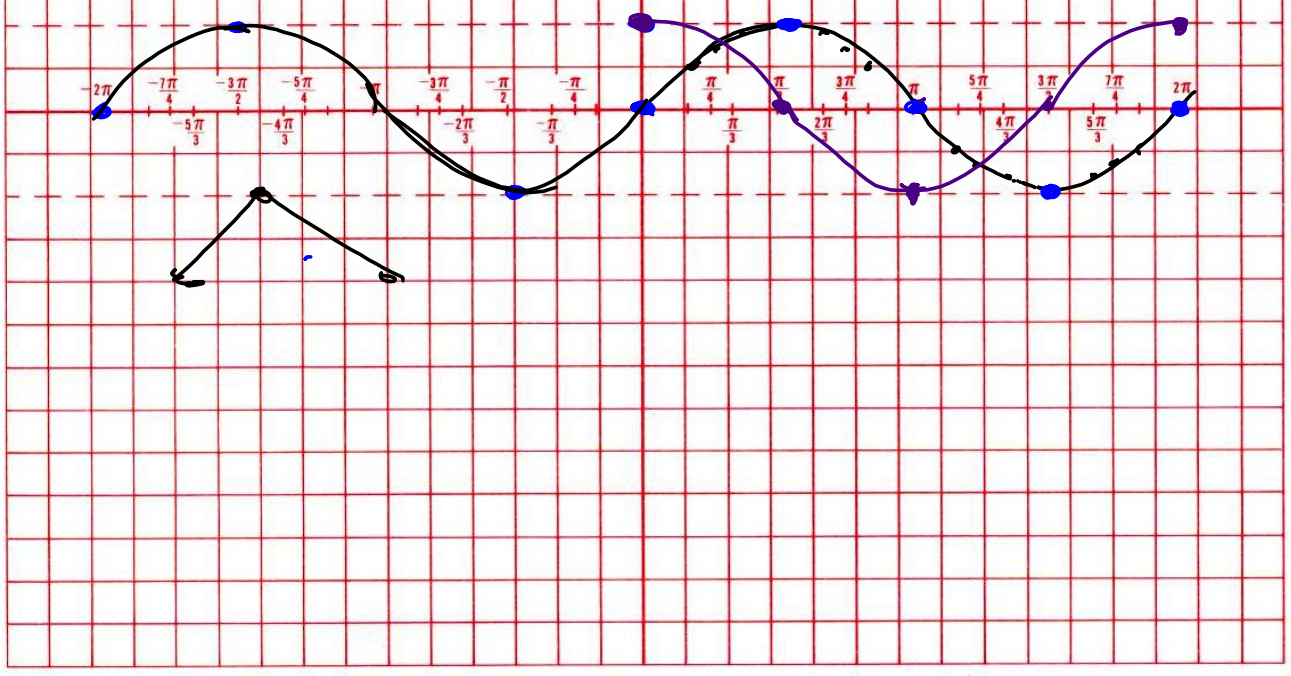
	period	
$y = \sin x$	2π	
$y = \sin 2x$	π	$\frac{2\pi}{2}$
$y = \sin 1x$	$\pi/2$	$\frac{2\pi}{4}$
$y = \sin \frac{1}{2}x$	4π	$\frac{2\pi}{1/2}$

$y = \sin x$

x	0	$\pi/6$	$\pi/4$	$\pi/3$	$\pi/2$
y	0	$1/2$	$\frac{\sqrt{2}}{2} = 0.7$	$\frac{\sqrt{3}}{2} = .86$	1

$y = \cos x$ | 1 | $\frac{\sqrt{3}}{2}$ | $\frac{\sqrt{2}}{2}$ | $1/2$ | 0

$y - \cos x$



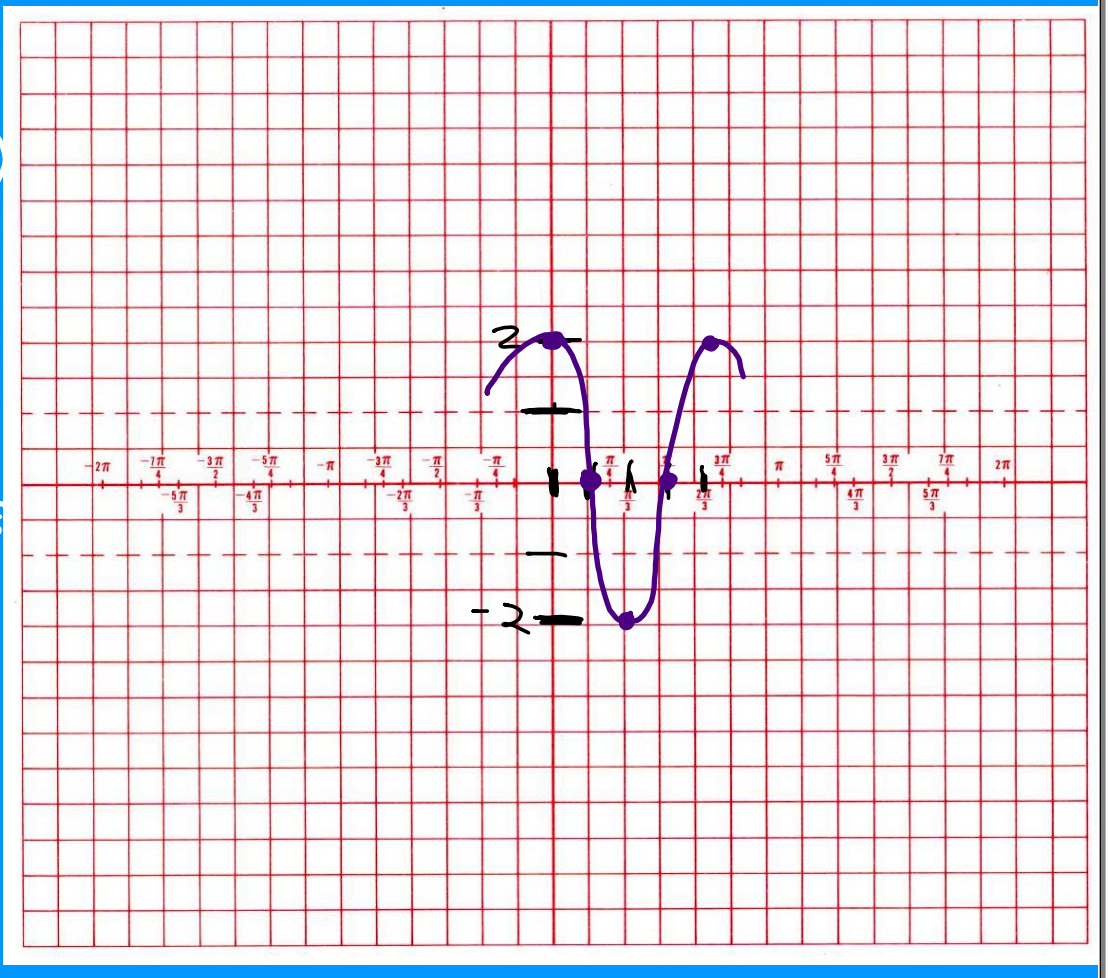
January 21, 2022

$y = 2\cos(3x)$

amp 2

period $\frac{2\pi}{3}$

$\frac{2\pi}{3} \cdot \frac{1}{2} = \frac{\pi}{6}$



January 21, 2022

$y = -3\sin(\frac{1}{2}x)$

amp $3(-)$

period

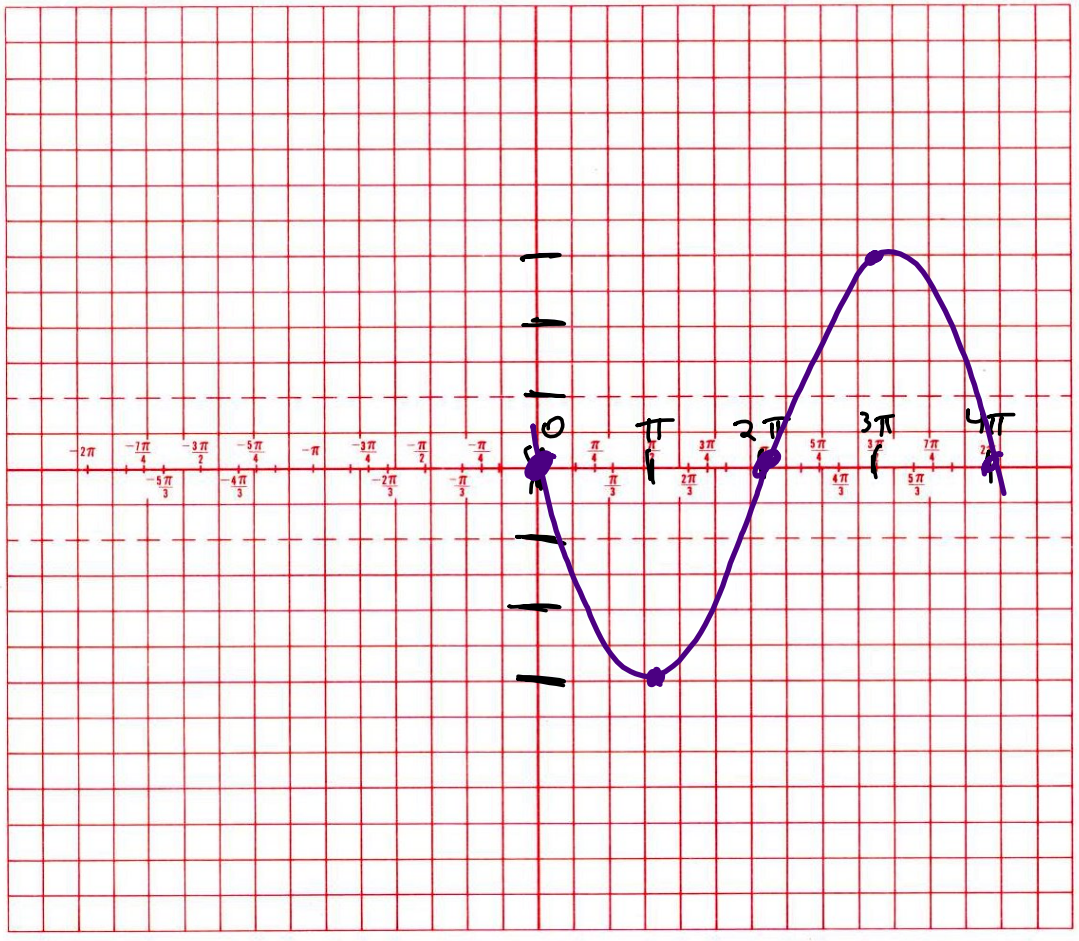
$\frac{2\pi}{1/2} = 4\pi$

Spacing

period $\cdot \frac{1}{4}$

$4\pi \cdot \frac{1}{4} = \pi$

$0\ \pi\ 2\pi\ 3\pi\ 4\pi$



$y = \frac{1}{2}\sin(-x)$

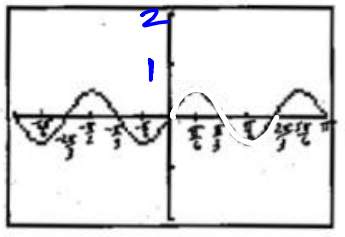
amp $\frac{1}{2}$

period $\frac{2\pi}{3} = \frac{2\pi}{b}$

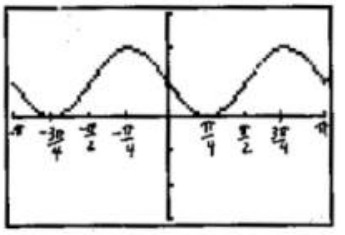
b. $\frac{3\pi}{4} = \frac{2\pi}{b}$

$b = \frac{2\pi}{3\pi/4} = 2\pi \cdot \frac{4}{3\pi} = \frac{8}{3}$

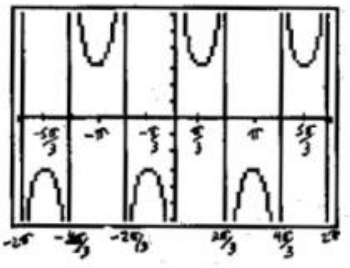
$b = \frac{2\pi}{\text{period}}$



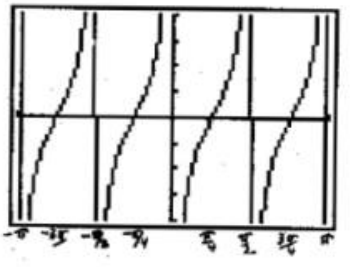
sin



cos



sec



tan