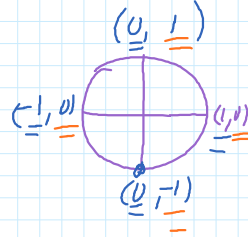
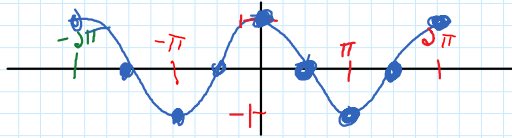
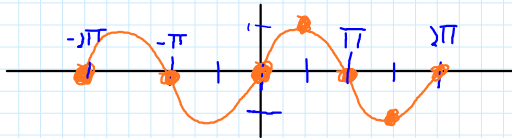


$y = A \cdot \sin(bx)$ and $y = A \cdot \cos(bx)$

Graph: $y = \cos x$
 $[-2\pi, 2\pi]$



Graph $y = \sin x$
 $[-2\pi, 2\pi]$



Period, T, of $\sin x = 2\pi$

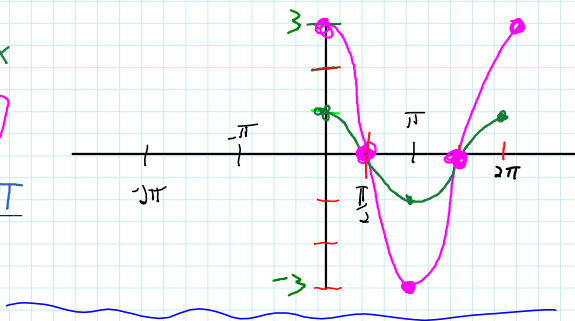
Period, T, of $\cos x = 2\pi$

<https://www.desmos.com/calculator/cz6oiqjfv?mobile=true>

$y = \cos x$

Graph $y = 3\cos x$
 $[-2\pi, 2\pi]$

Period, T, of $3\cos x = 2\pi$

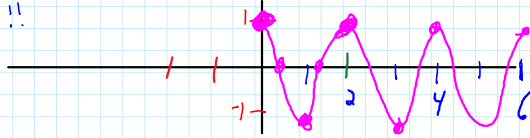


not same!!
x-scale!!

Graph $y = \cos x$

$$y = \cos(bx)$$

Period, T , of $\cos bx =$



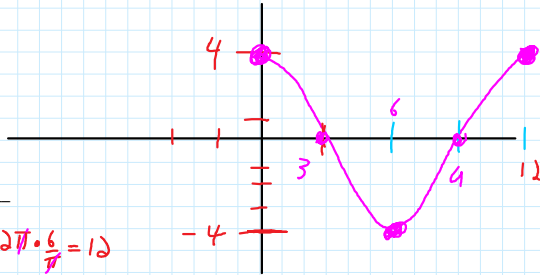
$$T = \frac{2\pi}{b} = \frac{2\pi}{\pi} = 2$$

Graph $y = 4\cos\frac{\pi}{6}x$

Period, T , of

$y = 4\cos\frac{\pi}{6}x =$

$$T = \frac{2\pi}{b} = \frac{2\pi}{\frac{\pi}{6}} = 2\pi \cdot \frac{6}{\pi} = 12$$



$y = A \sin(bx)$ and $y = A \cos(bx)$

Amplitude =

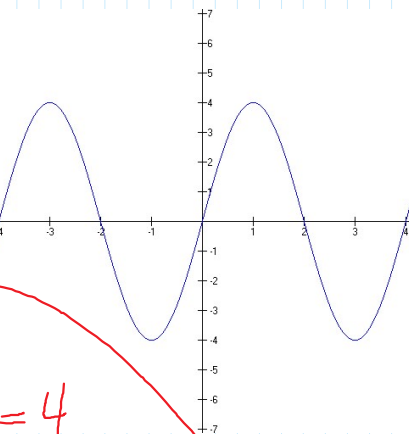
A , vertical stretch (distance from mid line)

Period =

$\frac{2\pi}{b} = T = \text{time to complete 1 cycle}$

Find the equation of the graph:

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



$$\text{Period, } T = \frac{2\pi}{b} = 4$$

$$2\pi = 4b$$

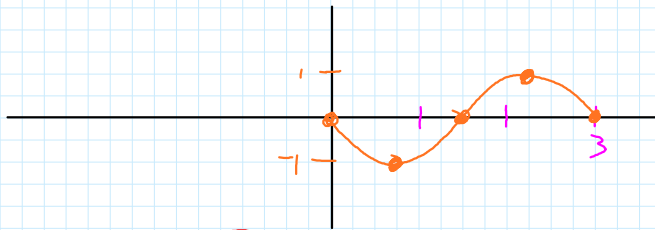
$$\frac{2\pi}{4} = b$$

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

4.5 | Page 304: 5-15, 21, 31-39 all odd.

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



$$T = \frac{2\pi}{b} = \frac{2\pi}{\frac{2\pi}{3}} = 2\pi \cdot \frac{3}{2\pi} = 3$$