

April 29/

GUIDED NOTES: Amplitude, Period, Frequency, and Vertical Shift

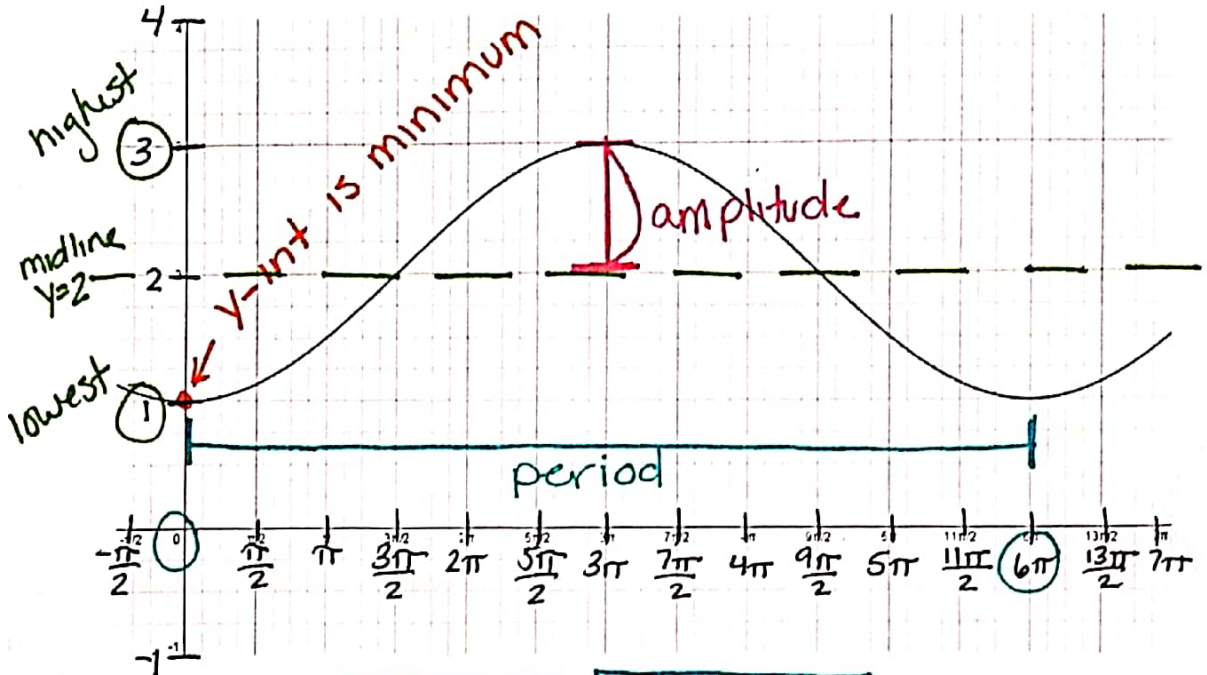
	Definition	How to find on a graph:	How to find in an equation:
amplitude	distance from the midline to a maximum or minimum midline - imaginary line graph oscillates about (bounces up and down around)	count the number of spaces from midline to any max/min	
period	how long (how many radians) until the graph repeats	start at y-intercept. Count how long it takes graph to get back to same type of point	
frequency	how much of the wave happens in one radian	* not found on graph find period, then do the reciprocal	
vertical shift	how far above or below the x-axis the graph was moved (where the midline is)	average the highest and lowest y-values $y = \frac{\text{highest} + \text{lowest}}{2}$	

There is also a such thing as a phase shift. You will learn about it in your next math class.

GUIDED NOTES: Graphs of Sine and Cosine

EX1:

$$\frac{3+1}{2} = 2$$



V.S. = up 2

amp = 1

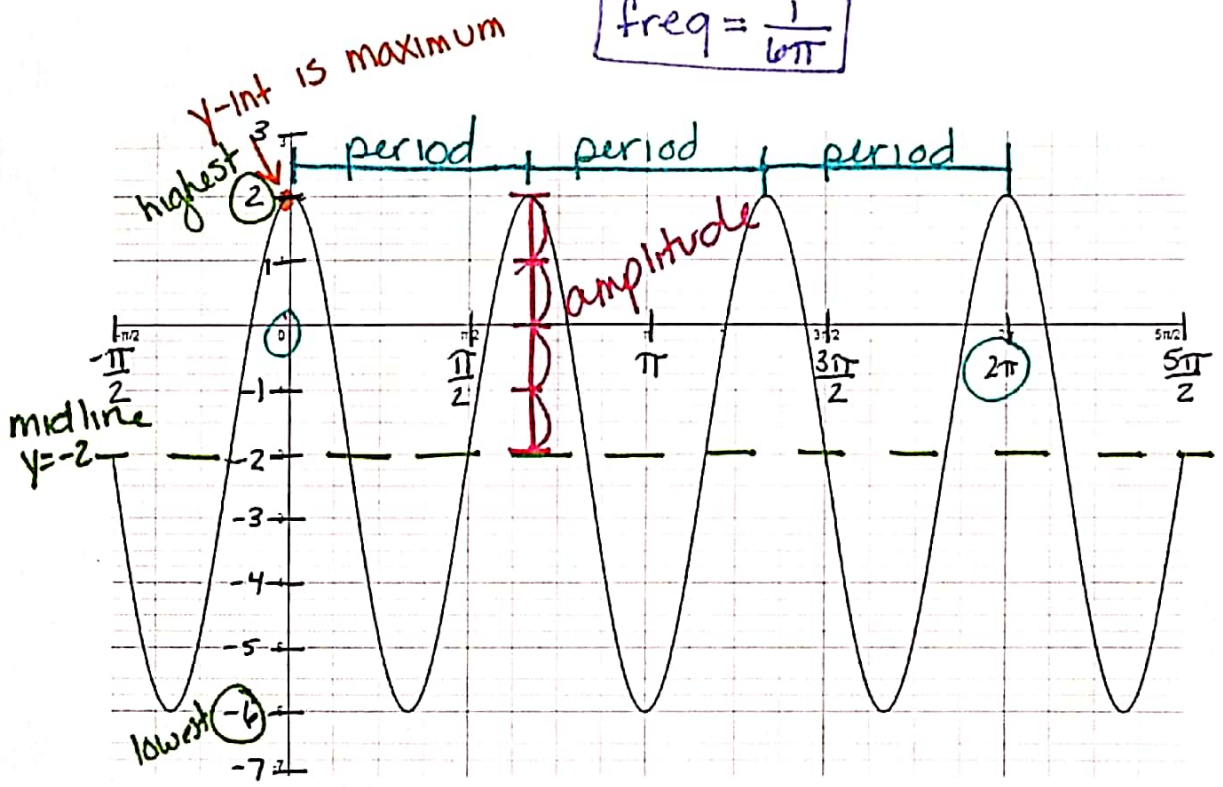
period = 6π

freq = $\frac{1}{6\pi}$

cosine function

EX2:

$$\frac{2+(-6)}{2} = -2$$



V.S. = down 2

amp = 4

$$\frac{3 \text{ periods} = 2\pi}{3} \implies \text{period} = \frac{2\pi}{3}$$

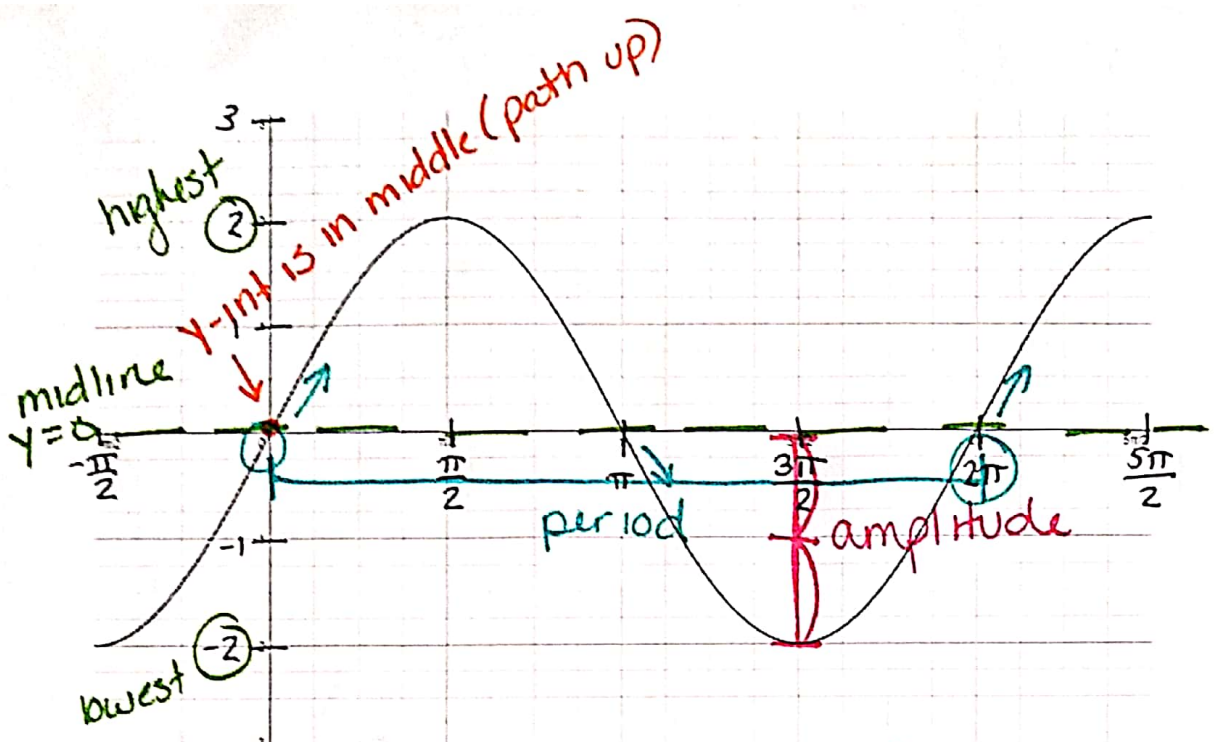
period = $\frac{2\pi}{3}$

freq = $\frac{3}{2\pi}$

cosine function

EX3:

$$\frac{2+2}{2} = 0$$



V.S. = none

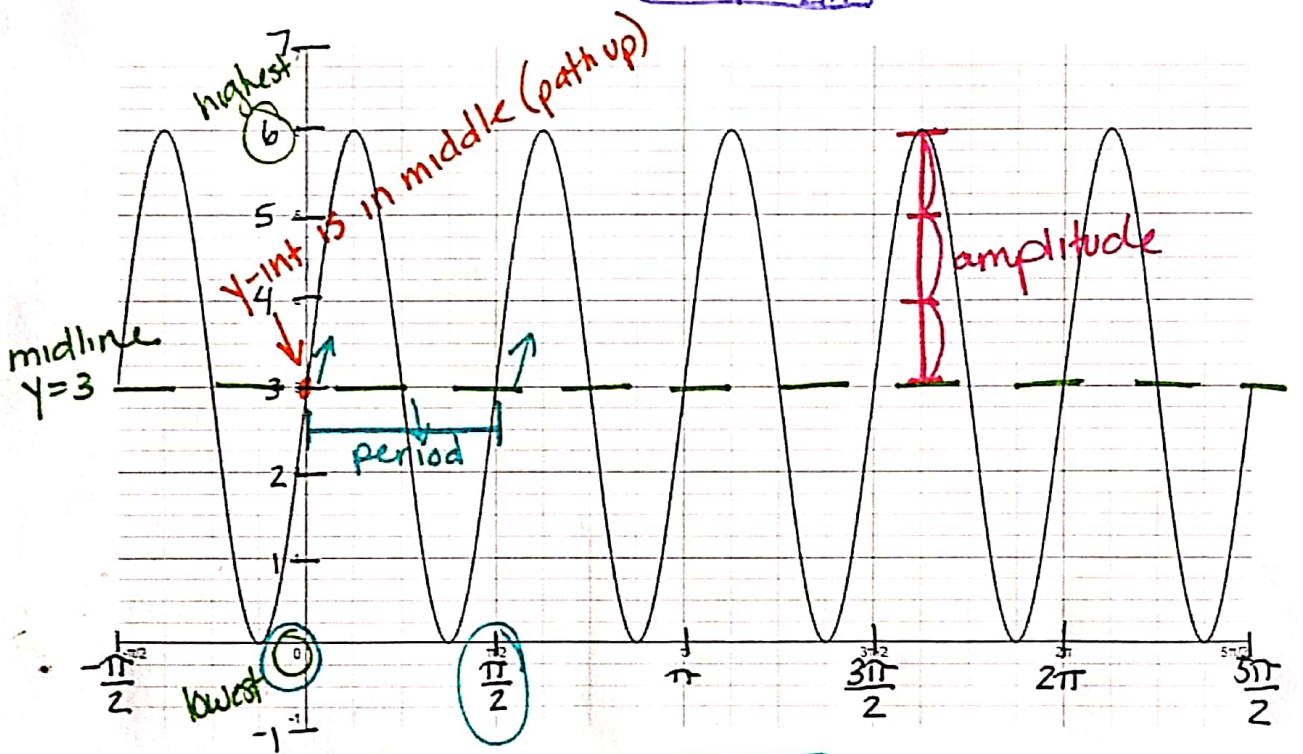
amp = 2

period = 2π

freq = $\frac{1}{2\pi}$

sine function

$$\frac{6+0}{2} = 3$$



V.S. = up 3

amp = 3

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

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

sine function