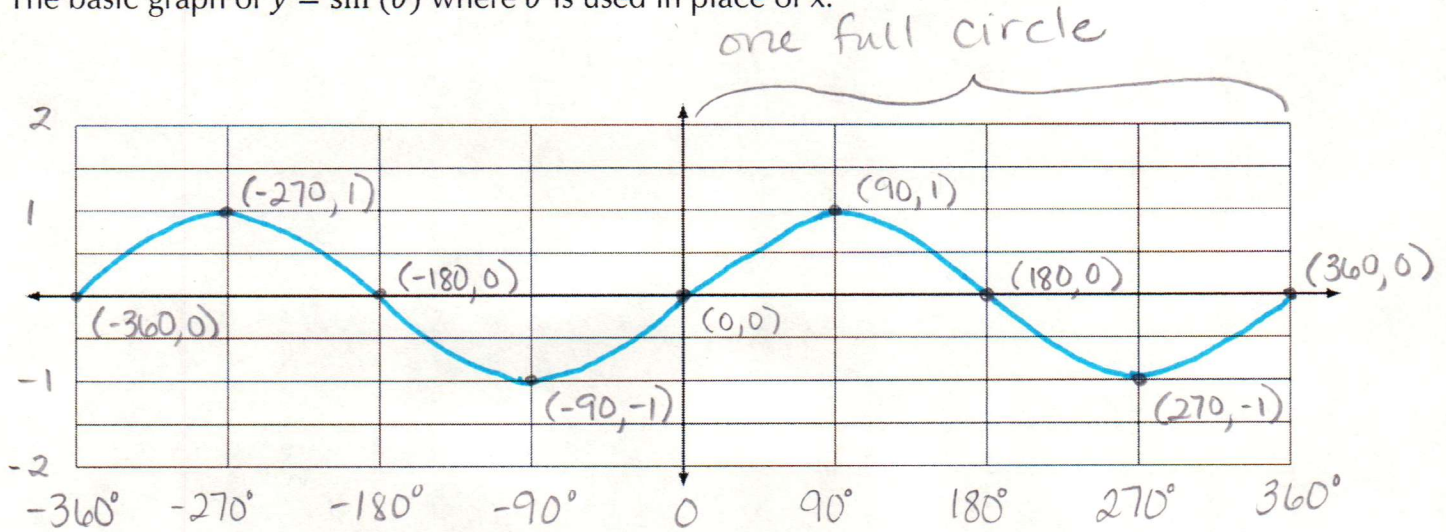


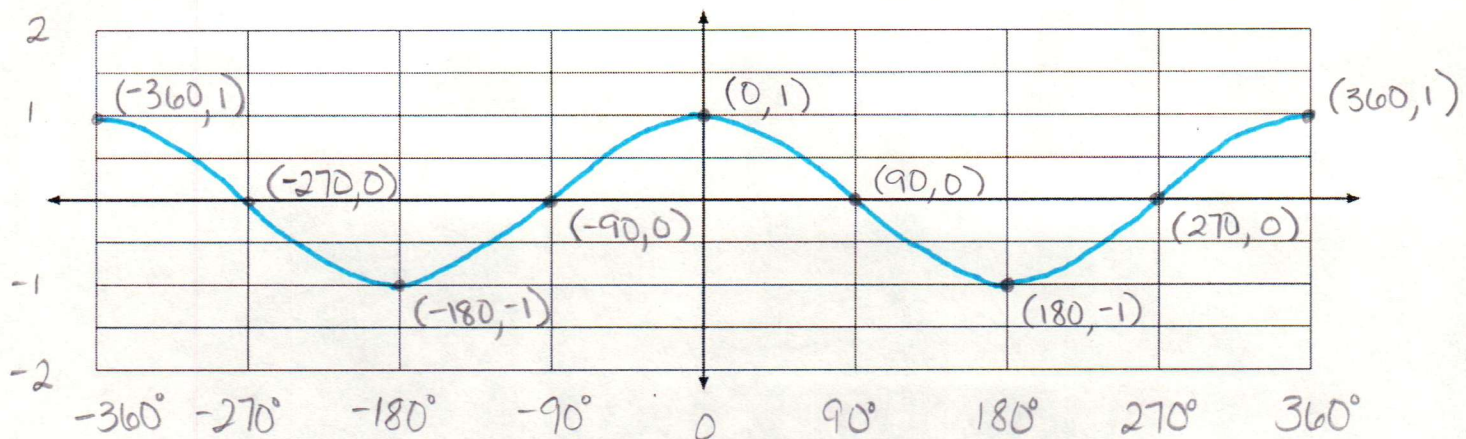
Notes – Graphing Periodic Functions

The basic graph of $y = \sin(\theta)$ where θ is used in place of x .



- Scale the graph so that you have one full rotation on either side of the y-axis.
- Plot the points $(\theta, \sin \theta)$ from the unit circle on the graph
- Connect the points so they make rolling hills, not shark teeth!

The basic graph of $y = \cos(\theta)$ where θ is used in place of x .

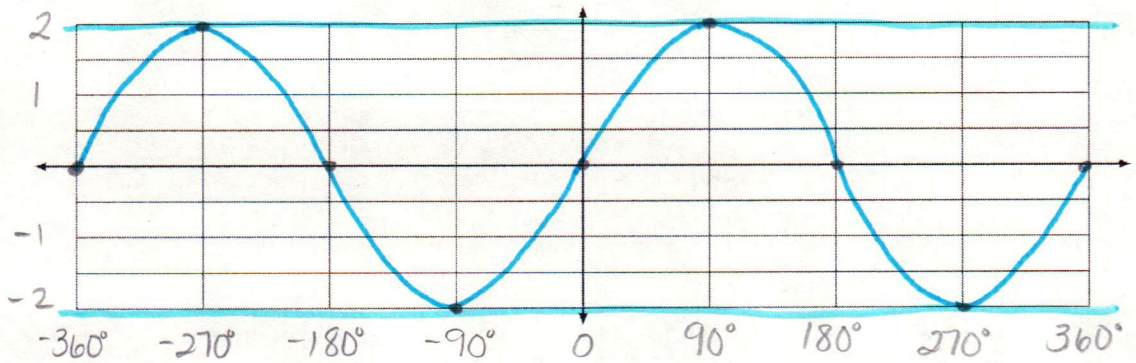


- Same steps but use the cos values from the unit circle. $(\theta, \cos \theta)$

Amplitude - The height of a sine / cosine graph, gives the max and min value of the graph.

Graph $y = 2\sin(\theta)$

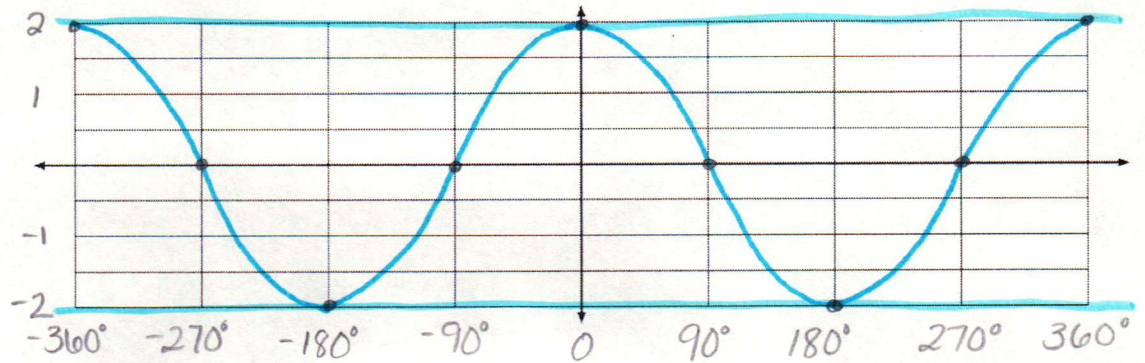
x	y
0	0
90	2
180	0
270	-2
360	0



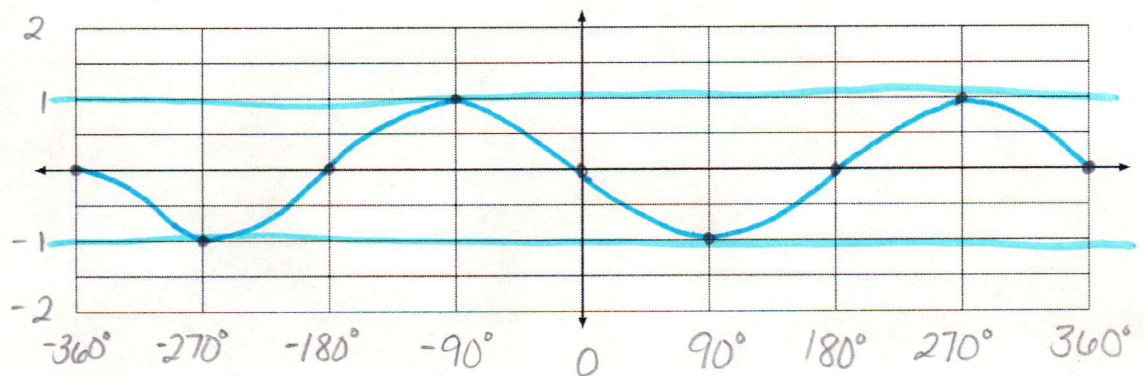
What happens when we change the value in front of the trig function?

It stretches by 2 so it is taller

Graph $y = 2\cos(\theta)$



Graph $y = -\sin(\theta)$



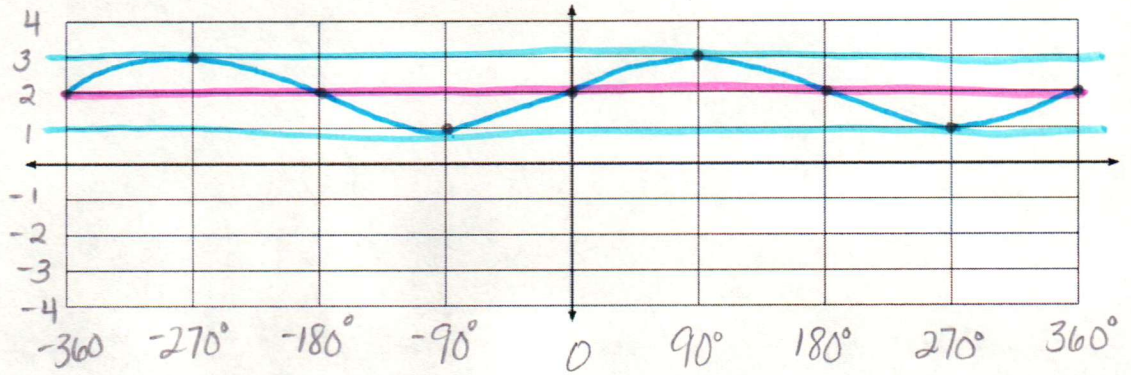
What happened when we made the trig function negative?

The graph gets reflected over the x-axis

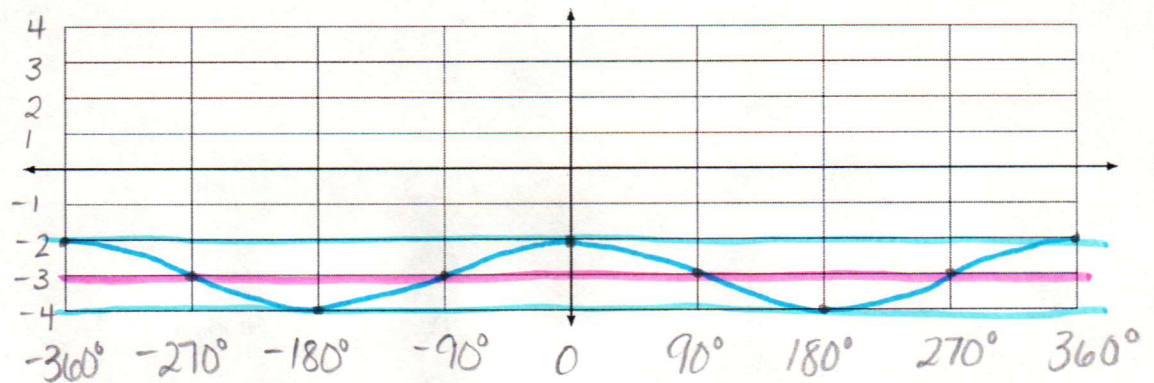
Vertical Shift - The amount the graph moves up and down.

Graph $y = \sin(\theta) + 2$

x	y
0	2
90	3
180	2
270	1
360	2



Graph $y = \cos(\theta) - 3$



What happens when we add or subtract after the trig function?

The graph shifts up or down

absolute value of a

$|a|$
amplitude
(height)

$$y = a \sin \theta + d$$

vertical shift