

13.7 Graphing Sin and Cos Curves Day 3

Objective: To graph sin and cos
curves using vertical and horizontal
shifts



$$y = (x - 5)^2 - 2$$

The **horizontal** shift is right 5

The **vertical** shift is down 2

These same concepts can be applied to trig graphing.

$$y = \sin(\theta - \pi) - 2$$

The **horizontal** shift is right π

The **vertical** shift is down 2



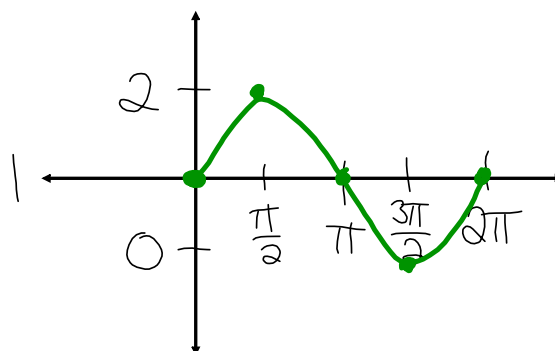
Sketch one period of $y = \sin\theta + 1$



mid: 1

$a = 1$

per: $\frac{2\pi}{1} = 2\pi$





Sketch one period of $y = 2 \cos(\theta - \frac{\pi}{2})$ _____

mid: 0

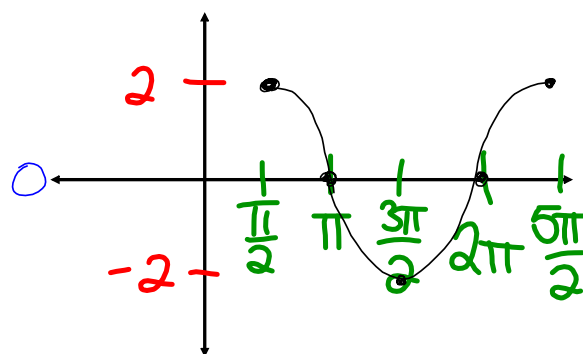


a = 2

period: 2π

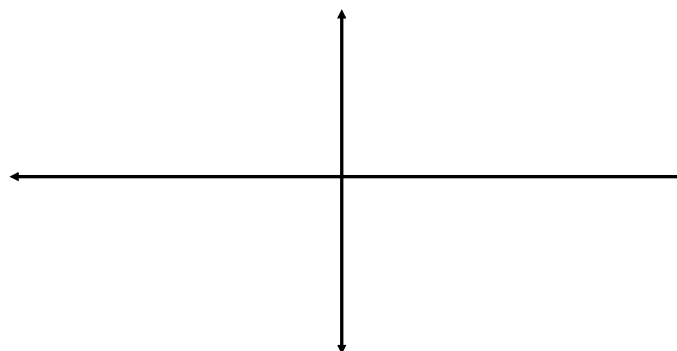


P.S.





Sketch one period of $y = -3 \sin(\theta + \pi) - 2$



Sketch one period of $y = 2 \sin 4(\theta + \frac{\pi}{8}) - 6$



mid: -6

a: 2

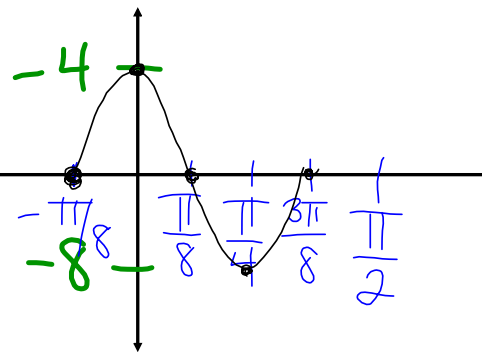


per: $\frac{2\pi}{4} = \frac{\pi}{2}$

-6

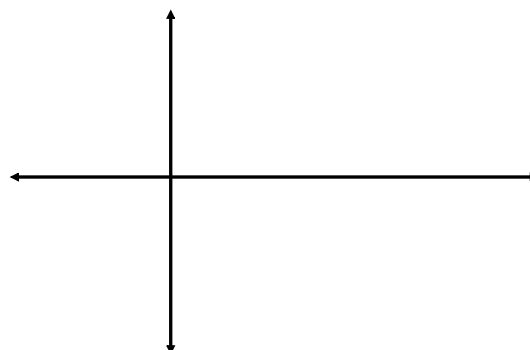


P.S. left $\frac{\pi}{8}$



YOUR TURN!

Sketch one period of $y = -2 \cos \left(3\left(\theta - \frac{\pi}{6}\right) \right) + 5$

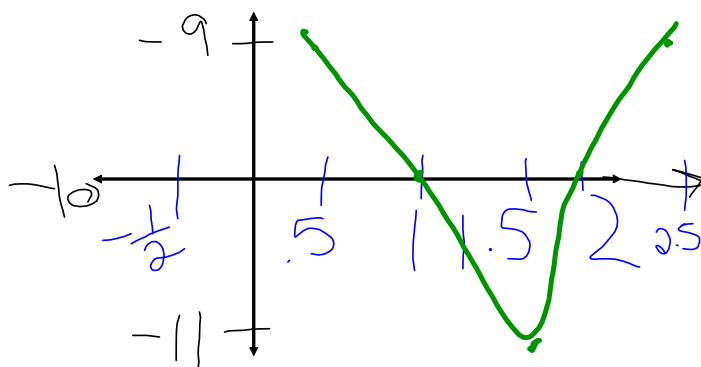


YOUR TURN!

Sketch one cycle of $y = \cos\left(\pi\left(\theta - \frac{1}{2}\right)\right) - 10$



$$\frac{2\pi}{\pi}$$



YOUR TURN!

Write an equation for a cosine function that has a phase shift of $\frac{\pi}{2}$ left, an amplitude of 5, is reflected over the x-axis and moved 6 units down.



HW 13.7

p. 760 #11-35 odd, (change the
shift in 11 and 29 to π not 3)
38-42 all