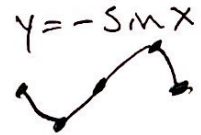


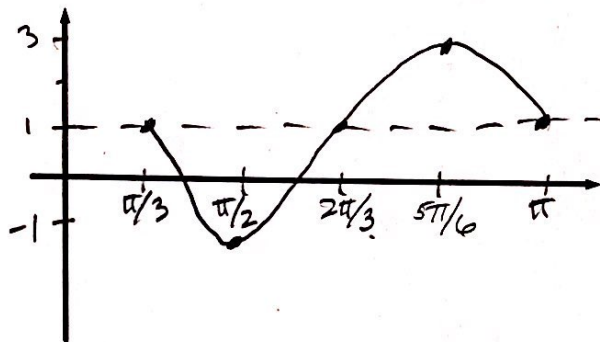
Warmup - Graphing Sin/Cos #5

(Make appropriate tick marks on the x- and y-axis, mark all critical points and provide the following information.)



1. Graph: $f(x) = -2\sin(3x - \pi) + 1$

• Reflected
• Radians



domain: $[\frac{\pi}{3}, \pi]$

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

phase shift: $\frac{\pi}{3}$

vertical shift: 1

amplitude: 2

range: $[-1, 3]$

$[-2+1, 2+1]$

Domain

$$[bx - c = 0, bx - c = 2\pi]$$

$$3x - \pi = 0 \quad 3x - \pi = 2\pi$$

$$3x = \pi \quad 3x = 3\pi$$

$$x = \frac{\pi}{3} \quad x = \pi$$

* 5 tick marks

$$\frac{\frac{\pi}{3} + \pi}{2} = \frac{\frac{\pi}{3} + \frac{3\pi}{3}}{2} = \frac{4\pi}{3} \cdot \frac{1}{2} = \frac{2\pi}{3}$$

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

$$\frac{\frac{2\pi}{3} + \frac{3\pi}{3}}{2} = \frac{\frac{5\pi}{3}}{2} = \frac{5\pi}{6}$$