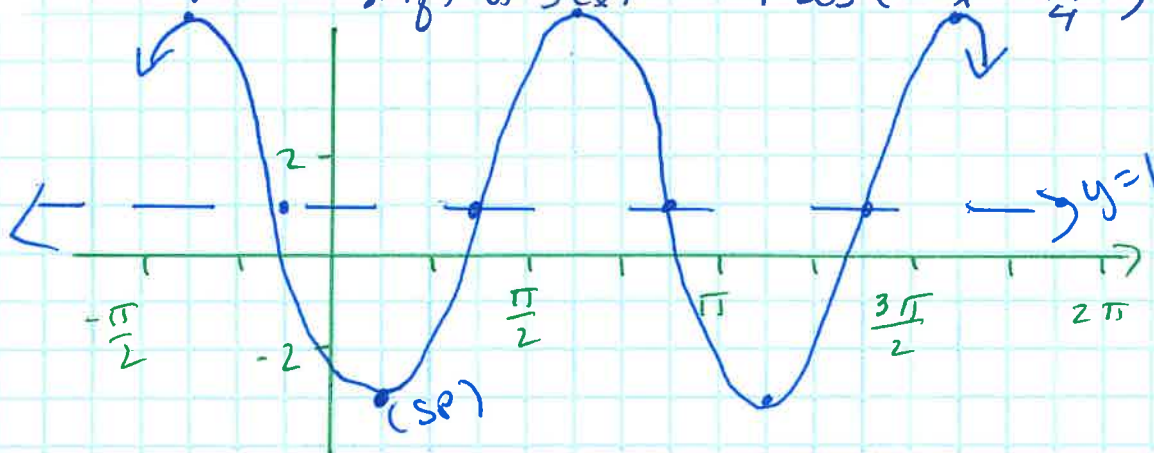


Warm Up 12/17

1) Find the amplitude, period, frequency, phase shift + vertical shift of $f(x) = -4 \cos(2x - \frac{\pi}{4}) + 1$. Then graph $f(x)$



Amp: 4
 Per = $\frac{2\pi}{2} = \pi$
 freq: $\frac{1}{\pi}$
 P.S. $-\left(-\frac{\pi}{4}\right) = \frac{\pi}{4}$ right

VS up 1
 CPS = $\frac{\pi}{4}$

2) A bass tuba can hit a note w/ a frequency of 50 hertz & an amplitude of 0.75. Write an equation for a sine $f(x)$ that models the sine wave.

$$50 = \frac{|b|}{2\pi}$$

$$y = .75 \sin(100\pi x)$$

$$100\pi = b$$

Finding Equations from a graph

- ① Draw in midline / sinusoidal axis if you can
- ② Find amplitude
- ③ Find period
- ④ pick a starting pt

mid line / d

$$\frac{\max + \min}{2}$$

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

amp / a

$$\frac{\max - \min}{2}$$

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

$$\text{PS} = -\frac{c}{b}$$