

Graphing Sine and Cosine

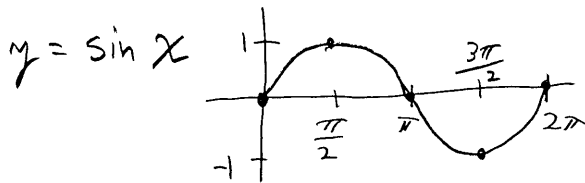
$$y = a \sin(bx - c) + d$$

$$\text{amplitude} = |a|$$

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

$$\text{phase shift} = \frac{c}{b}$$

$$\text{vertical translation} = d$$



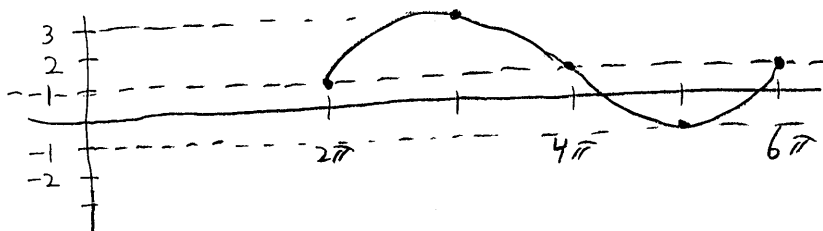
example: $y = 2 \sin\left(\frac{1}{2}x - \pi\right) + 1$

$$\text{amplitude} = 2$$

$$\text{period} = 4\pi$$

$$\text{phase shift} = 2\pi$$

$$\text{vert. transl.} = 1$$



$$y = a \cos(bx - c) + d$$

same as the sine

