A 8.11 # Setting the SCALES on the Axes System #

In general, $y = a\sin(kx)$ or $y = a\cos(kx)$

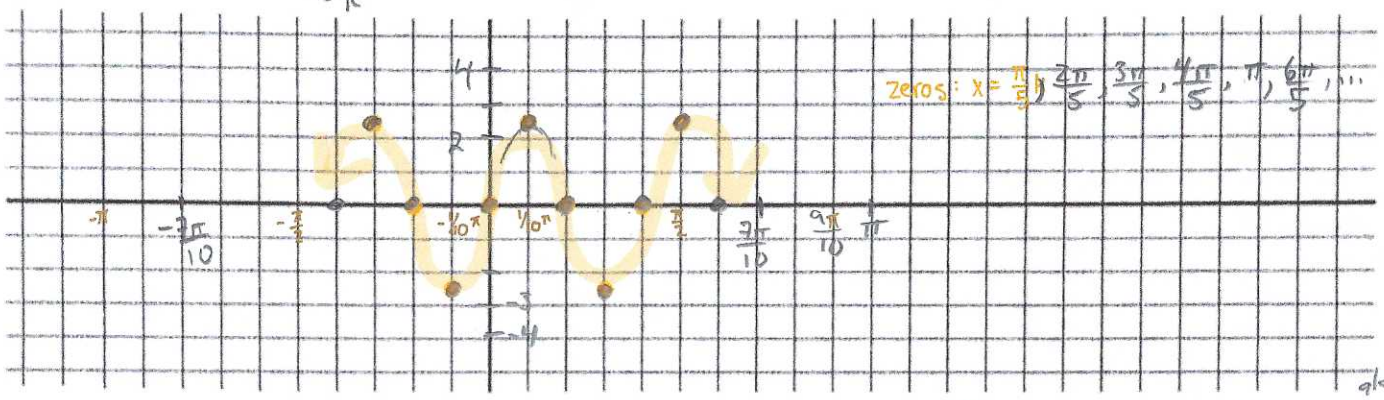
has a period of $\frac{2\pi}{k}$. A suitable scale is $\frac{\text{Period}}{4}$ or $\frac{2\pi}{k} \div 4$ since an important point occurs every 1/4 of a cycle

For each of the following functions:
- State the **amplitude** and **period**
- Label the appropriate **scales** on the axes
- Sketch at least **2 cycles** of the functions

Same as Critical Interval.

Example #1: $y = 2.5\sin(5x)$ Amplitude = 2.5 Period = $\frac{2\pi}{5}$ Scale = $\frac{\frac{2\pi}{5}}{4} = \frac{\pi}{10}$

(k)

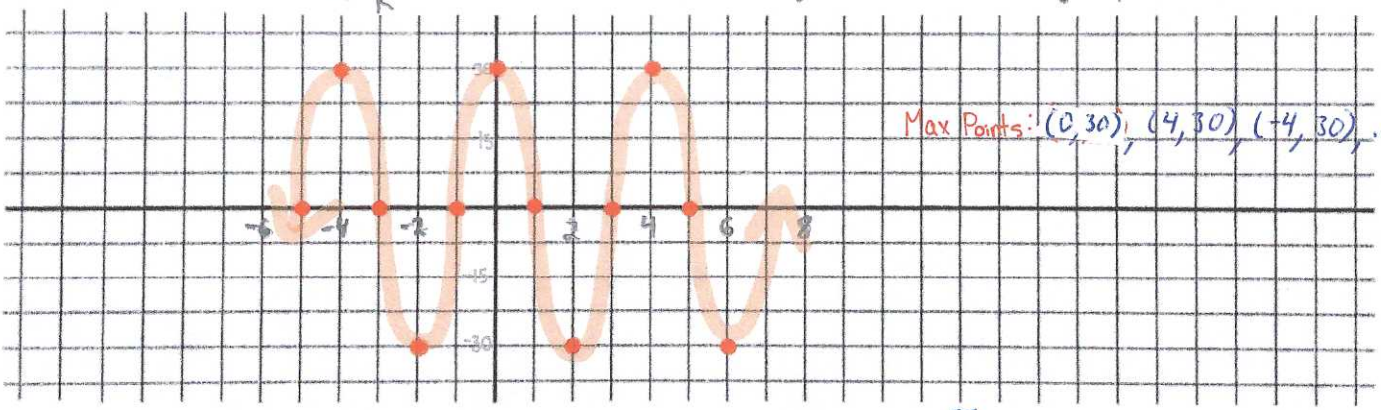


aka C.I.

Example #2: $y = 30\cos(\frac{\pi}{2}x)$ Amplitude = 30 Period = $\frac{2\pi}{\frac{\pi}{2}} = 4$ Scale = $\frac{4}{4} = 1$

"Angular velocity aka Angle Speed = 2π in 4 seconds"

(k)

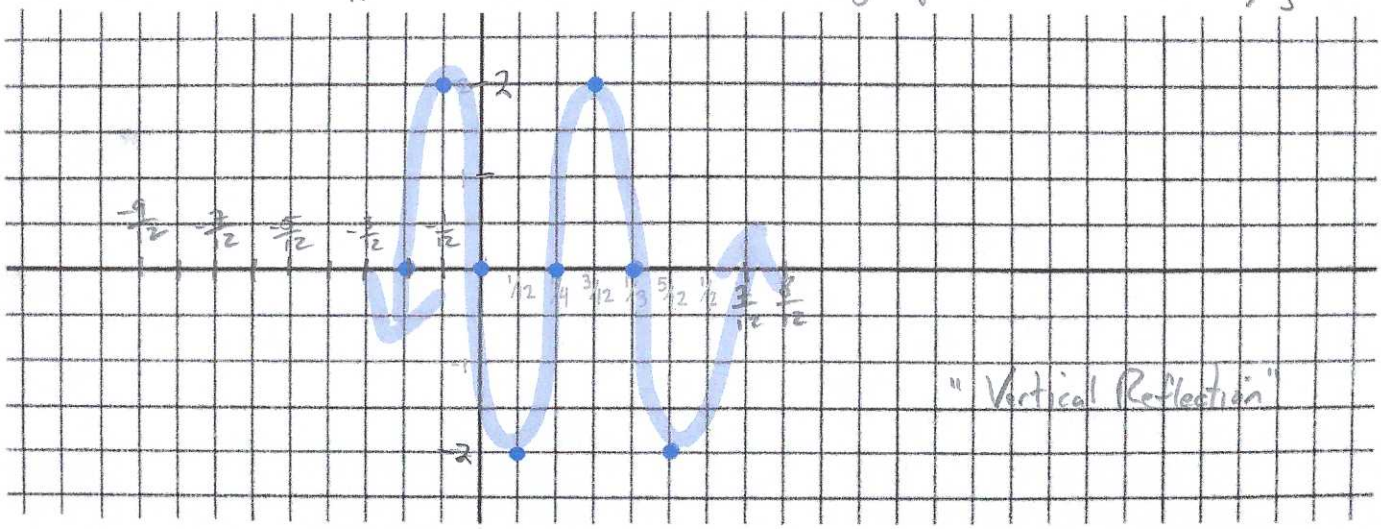


C.I.

Example #3: $y = -2\sin(6\pi t)$ Amplitude = |-2| Period = $\frac{2\pi}{6\pi} = \frac{1}{3}$ Scale = $\frac{1}{12}$

(k)

"Angle speed = 2π radians in say $\frac{1}{3}$ of a day"



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