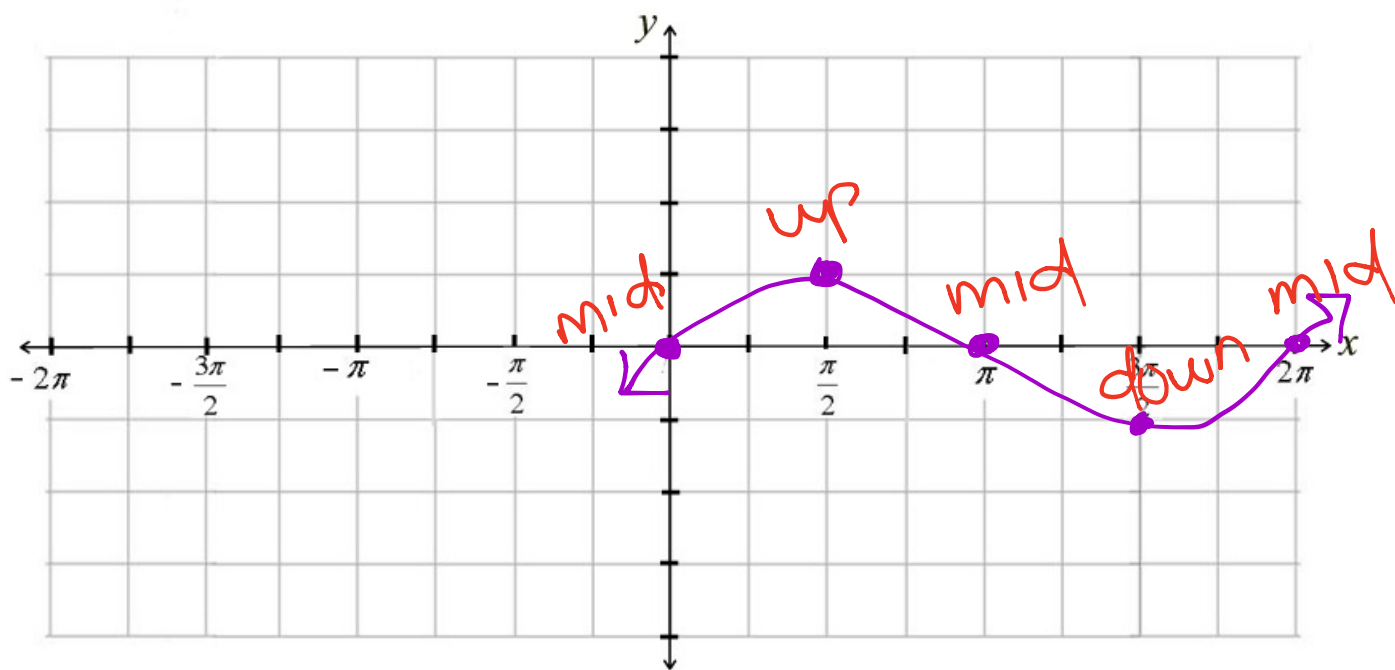


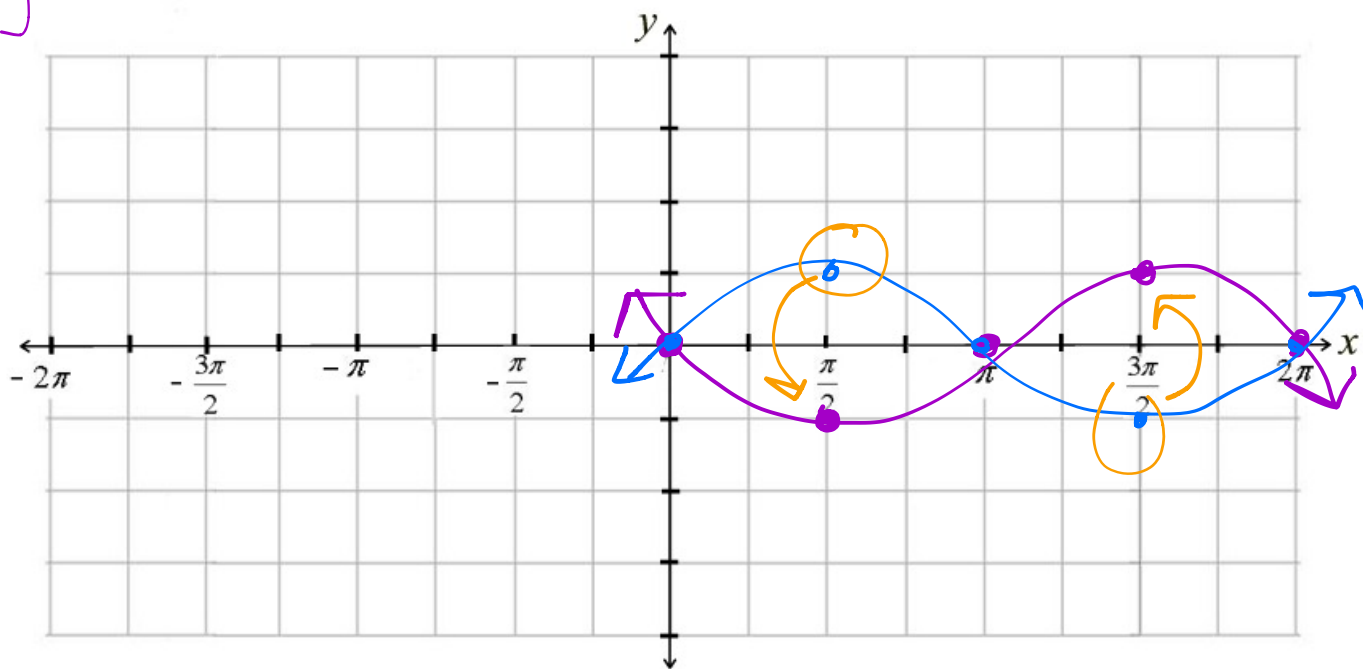
$$y = \sin x$$

★ parent function

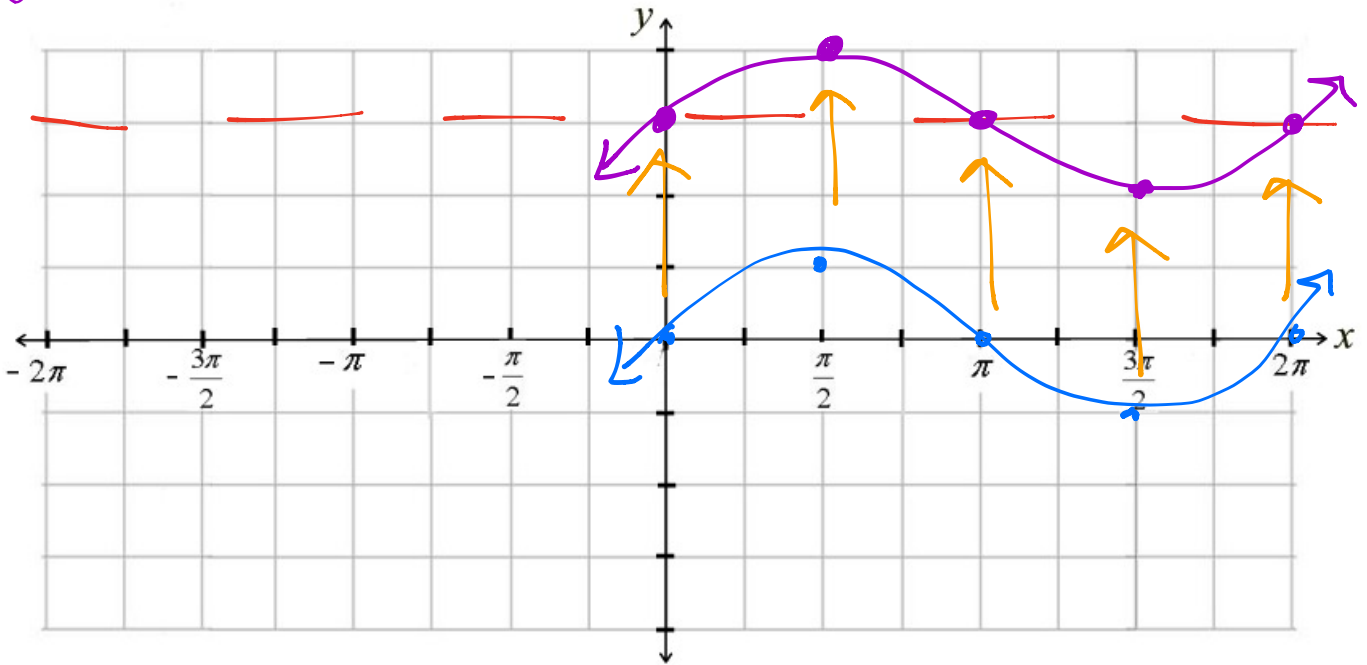


→ reflect over x-axis

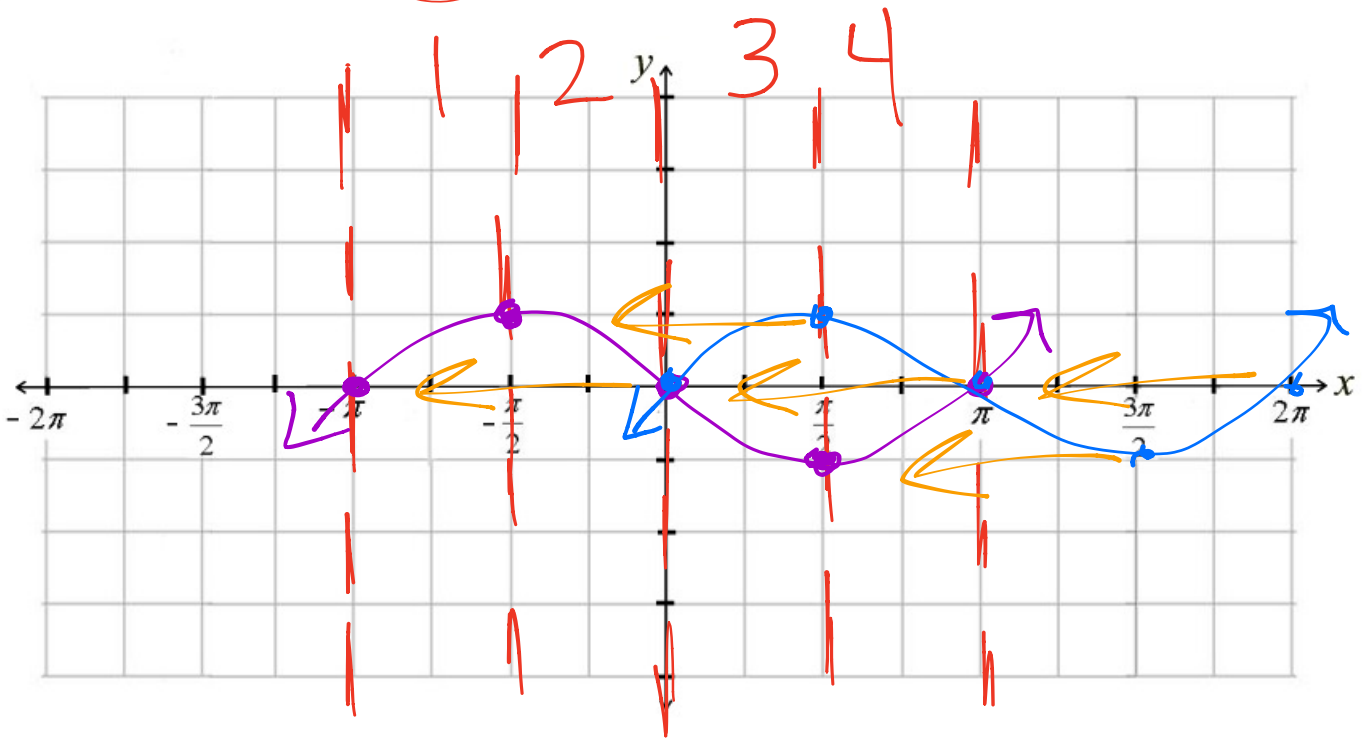
$$y = -\sin x$$



$y = \sin x + 3$ \rightarrow up 3
 midline @ $y = 3$



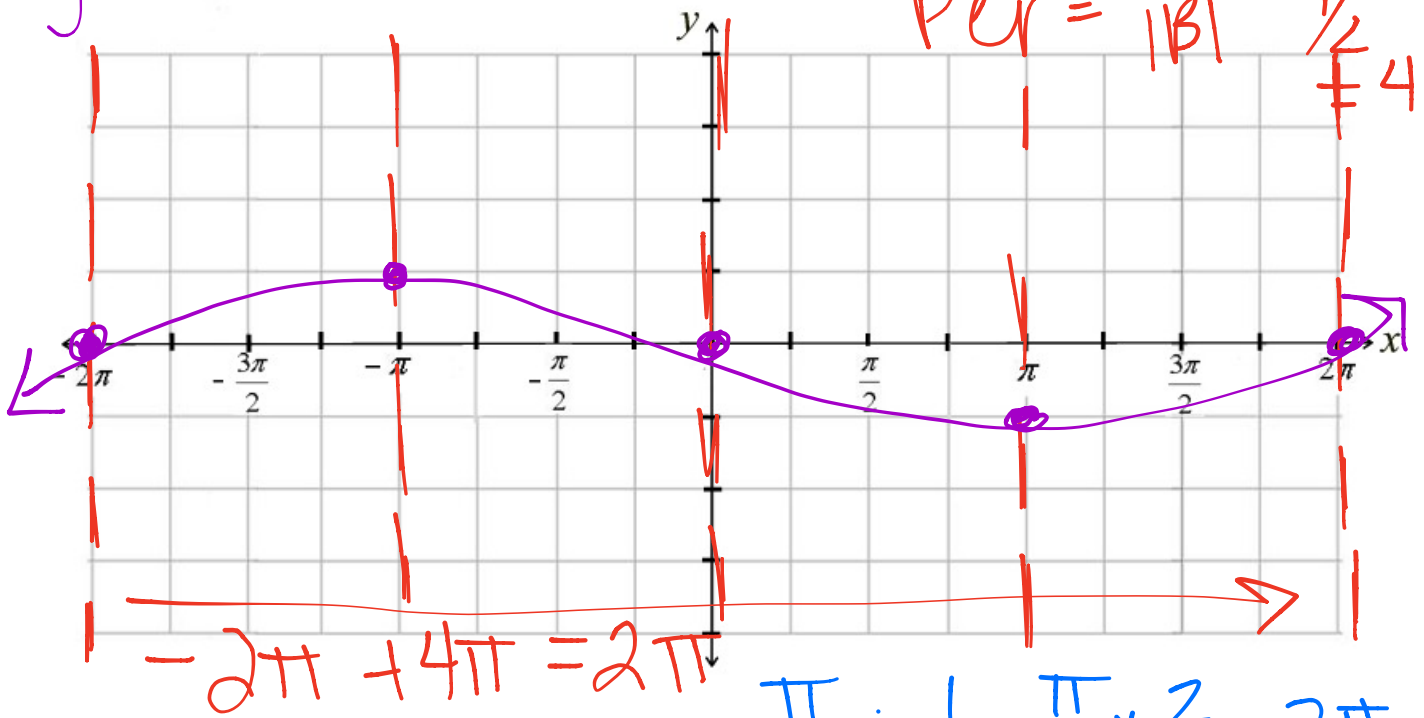
$y = \sin(x + \pi)$ \rightarrow left π (phase shift)



$$y = \sin \left[\frac{1}{2}(x + 2\pi) \right] \rightarrow \text{left} + 2\pi$$

$$y = \sin \left(\frac{1}{2}x + \pi \right) \rightarrow B = \frac{1}{2}$$

$$\text{Per} = \frac{2\pi}{|B|} = \frac{2\pi}{\frac{1}{2}} = 4\pi$$



$$\frac{4\pi}{4} = \pi$$

$$\frac{\pi}{1} \div \frac{1}{2} = \frac{\pi}{1} \times \frac{2}{1} = 2\pi$$

$$y = -\frac{1}{2}\sin x \rightarrow A = -\frac{1}{2} \quad \text{Amp} = |A| = \frac{1}{2}$$

