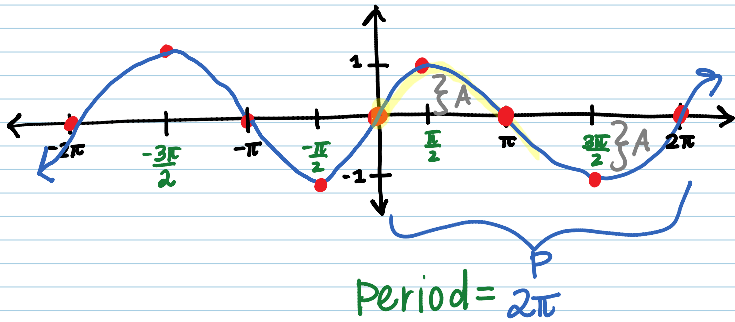


Graphing Sine & Cosine Functions

$$y = \sin x$$

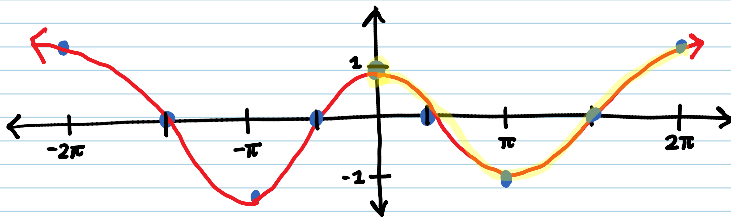


*Starts @ the origin

Amplitude = 1

(how far the graph goes up or down from the x-axis)

$$y = \cos x$$



*COS starts up high

$A = 1$
 $P = 2\pi$

Key Characteristics of $y = \sin x$ & $y = \cos x$

$y = a \sin bx$ & $y = a \cos bx$

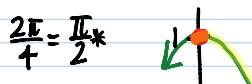
Amplitude = $|a|$ Period = $\frac{2\pi}{|b|}$

graph

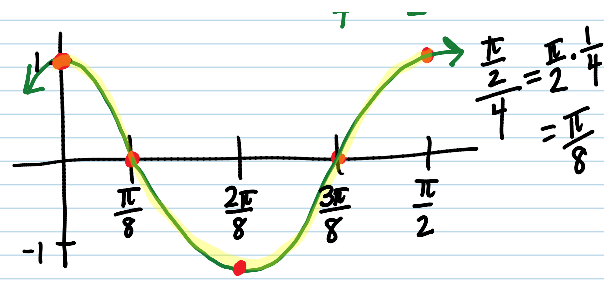
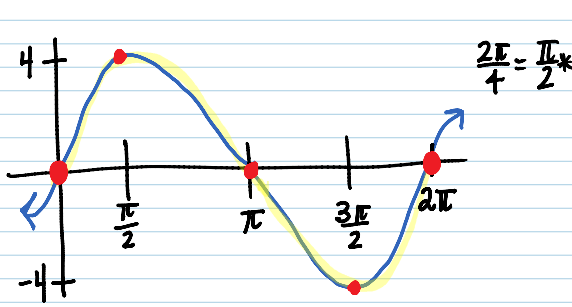
① $y = 4 \sin x$ $A = 4$
 $P = \frac{2\pi}{1} = 2\pi$



② $y = \cos 4x$ $A = 1$
 $P = \frac{2\pi}{4} = \frac{\pi}{2}$

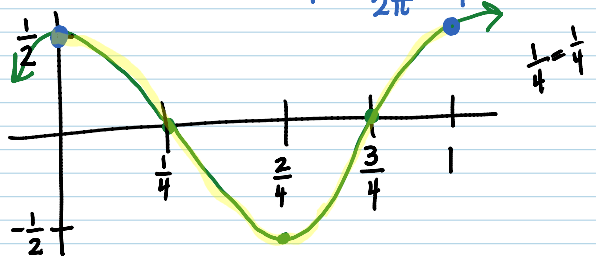
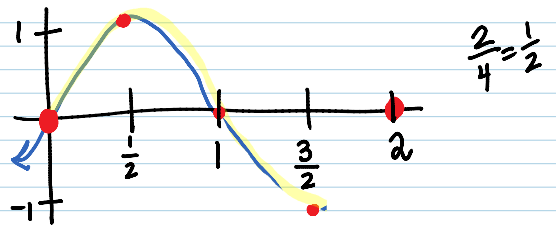


$\frac{\pi}{2} = 2 \cdot \frac{1}{4}$



③ $y = \sin \pi x$ $A = 1$
 $P = \frac{2\pi}{\pi} = 2$

④ $y = \frac{1}{2} \cos 2\pi x$ $A = \frac{1}{2}$
 $P = \frac{2\pi}{2\pi} = 1$



⑤ $y = 5 \cos(\frac{\pi}{2} x)$ $A = 5$
 $P = \frac{2\pi}{\frac{\pi}{2}} = 2\pi \cdot \frac{2}{\pi} = 4$

⑥ $y = 2 \sin \alpha x$ $A = 2$
 $P = \frac{2\pi}{2} = \pi$

