

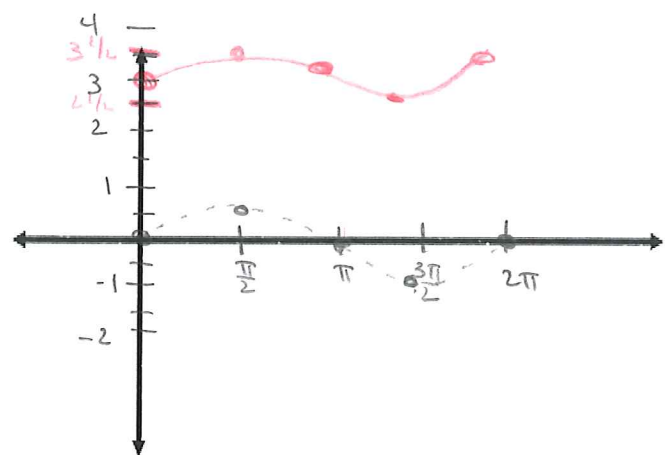
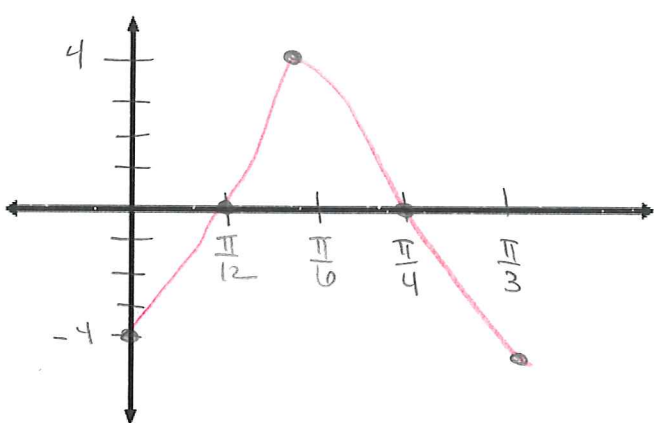
Identify the important information for the following equations. Then graph.

1.) $y = -4 \cos 6x$

2.) $y = \frac{1}{2} \sin x + 3$

Amplitude: 4 Period: $\frac{2\pi}{6} = \frac{\pi}{3}$
 H.S: none V.S: none
 D: $(-\infty, \infty)$ R: $[-4, 4]$

Amplitude: $\frac{1}{2}$ Period: 2π
 H.S: none V.S: $\uparrow 3$
 D: $(-\infty, \infty)$ R: $[2\frac{1}{2}, 3\frac{1}{2}]$

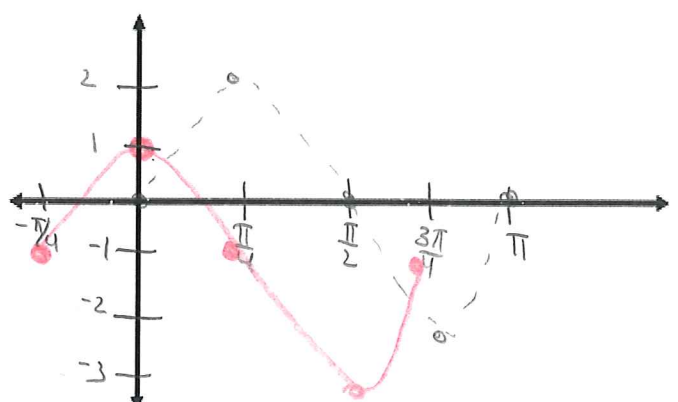
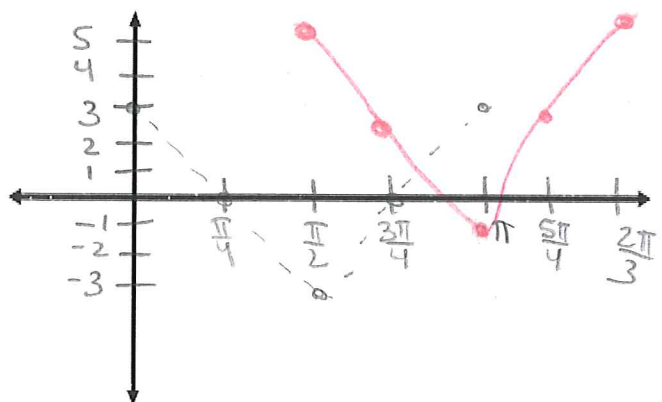


3.) $y = 3 \cos(2x - \pi) + 2$

4.) $y = 2 \sin\left(x + \frac{\pi}{4}\right) - 1$

Amplitude: 3 Period: $\frac{2\pi}{2} = \pi$
 H.S: $\frac{\pi}{2} \rightarrow$ V.S: $\uparrow 2$
 D: $(-\infty, \infty)$ R: $[-1, 5]$

Amplitude: 2 Period: $\frac{2\pi}{2} = \pi$
 H.S: $\frac{\pi}{4} \leftarrow$ V.S: $\downarrow 1$
 D: $(-\infty, \infty)$ R: $[-3, 1]$

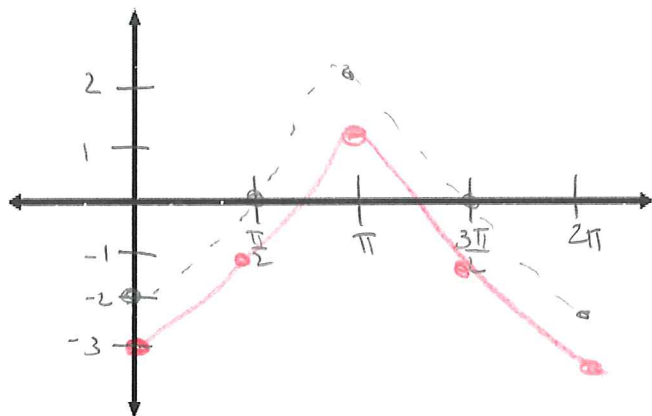


5.) $y = -2\cos x - 1$

Amplitude: 2* Period: 2π

H.S: none V.S: $\downarrow 1$

D: $(-\infty, \infty)$ R: $[-3, 1]$

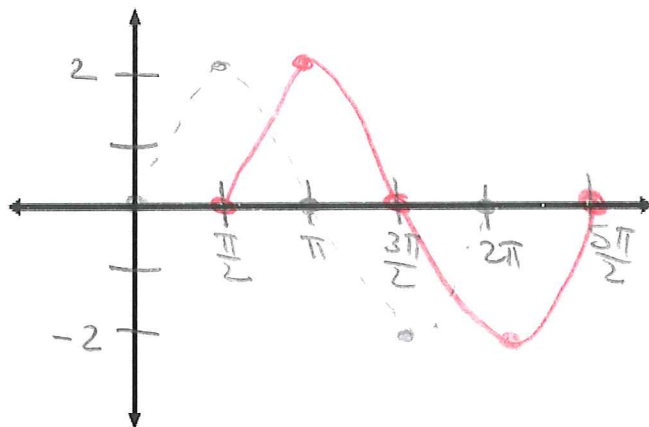


6.) $y = 2\sin\left(x - \frac{\pi}{2}\right)$

Amplitude: 2 Period: 2π

H.S: $\pi/2 \rightarrow$ V.S: none

D: $(-\infty, \infty)$ R: $[-2, 2]$

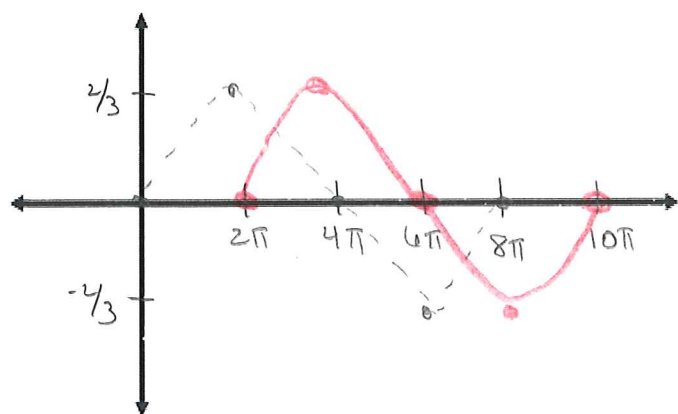


7.) $y = \frac{2}{3}\sin\frac{1}{4}(x - 2\pi)$

Amplitude: $2/3$ Period: $\frac{2\pi}{1/4} = 8\pi$

H.S: $2\pi \rightarrow$ V.S: none

D: $(-\infty, \infty)$ R: $[-2/3, 2/3]$

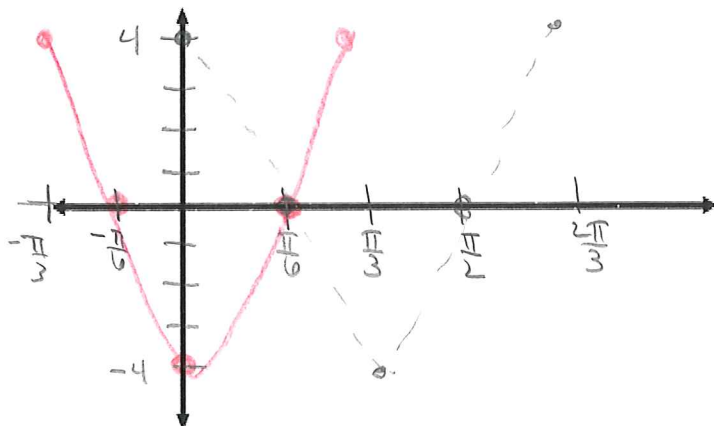


8.) $y = \frac{4}{3}\cos(3x + \pi)$

Amplitude: 4 Period: $2\pi/3$

H.S: $\pi/3 \leftarrow$ V.S: none

D: $(-\infty, \infty)$ R: $[-4, 4]$

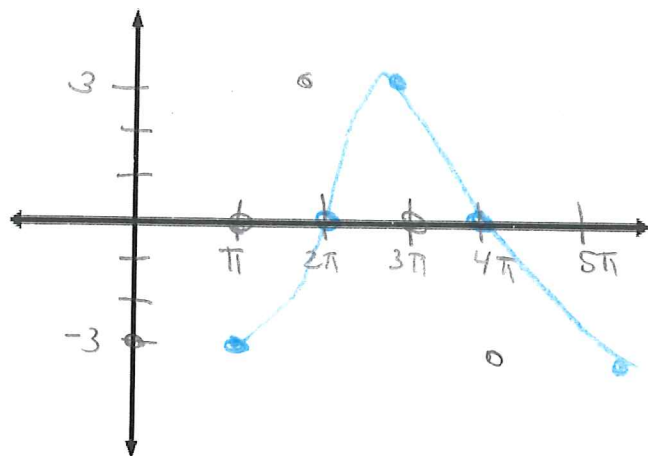


9.) $y = -3 \cos \frac{1}{2}(x - \pi)$

Amplitude: 3 Period: $\frac{2\pi}{\frac{1}{2}} = 4\pi$

H.S: $\pi \rightarrow$ V.S: none

D: $(-\infty, \infty)$ R: $[-3, 3]$

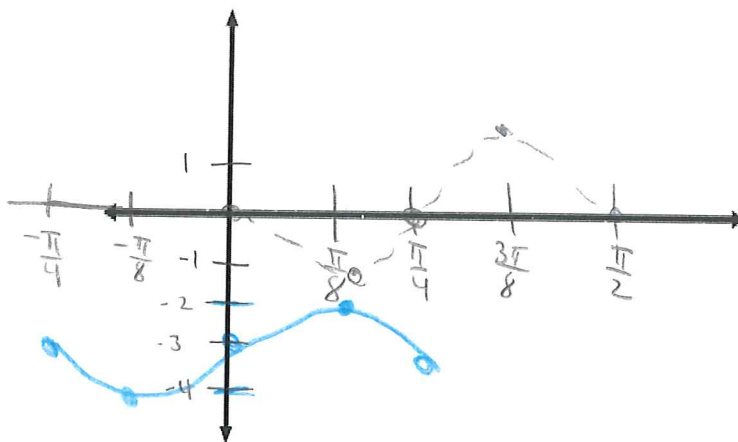


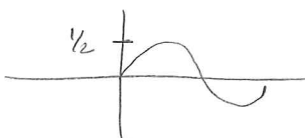
10.) $y = -\sin(4x + \pi) - 3$

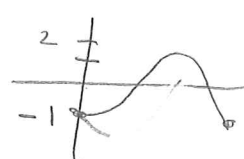
Amplitude: 1 Period: $\frac{2\pi}{4} = \frac{\pi}{2}$

H.S: $\frac{\pi}{4} \leftarrow$ V.S: $\downarrow 3$

D: $(-\infty, \infty)$ R: $[-4, -2]$



11.) What is the maximum value of $y = \frac{1}{2} \sin x + 2$? $2\frac{1}{2}$ 

12.) What is the minimum value of $y = -\cos(2x - \pi) + 3$? 2 

13.) Compare the graphs of $y = \sin(2x + \pi) + 3$ and $y = \sin 2\left(x - \frac{\pi}{2}\right) - 1$. Explain **all** differences and similarities.

<u>Similar</u>	<u>differences</u>
Amplitude of 1	H.S. (L) $\frac{\pi}{2}$ to right
Period of π	(R) $\frac{\pi}{2}$ to left
Sine curves	V.S (L) up 3
	R down 1