3.3 Video Worksheet Name: _____

1.) (2 pts.) State the amplitude, period, and phase shift for $y = -\frac{1}{2}\sin\left(3x + \frac{\pi}{6}\right)$

2.) (8 pts.) Sketch the graph of $y = 6 - 4\cos\left(4x + \frac{\pi}{2}\right)$ on the interval $-\frac{\pi}{2} \leq x \leq \pi$ by completing each of the following steps on the same graph. *Clearly label which graph belongs to each step.*

(a.) Graph $y = \cos(4x)$.

(b.) Graph $y = \cos\left(4x + \frac{\pi}{2}\right)$

(c.) Graph $y = -4\cos\left(4x + \frac{\pi}{2}\right)$. (*Note that this is the graph of* $4\cos\left(4x + \frac{\pi}{2}\right)$ *reflected about the* x*-axis*)

(d.) Graph $y = 6 - 4\cos\left(4x + \frac{\pi}{2}\right)$