Modeling Sine & Cosine (Solution)

1. Midline: $y=0$

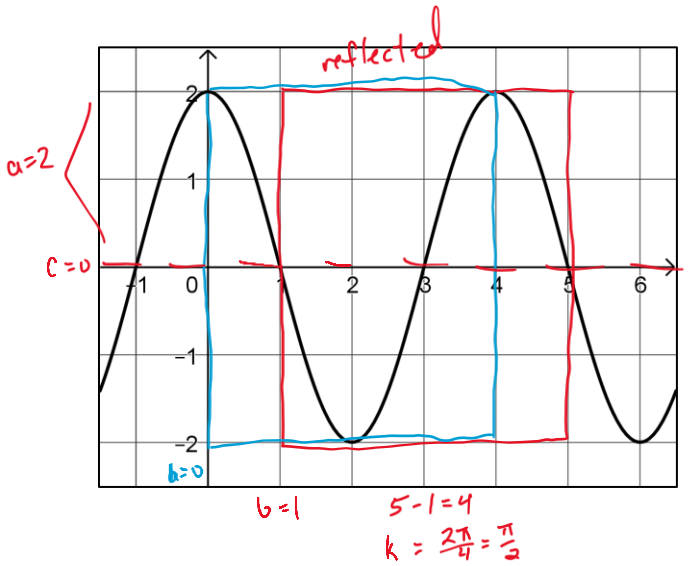
   Amplitude: 2

   Period: $\frac{\pi}{2}$

   Sine Equation: $y=-2\sin\left(\frac{\pi}{2}(x-1)\right)+0$

   Cosine Equation: $y=2\cos\left(\frac{\pi}{2}x\right)$

   Equations may vary



2. Midline: $y=1$

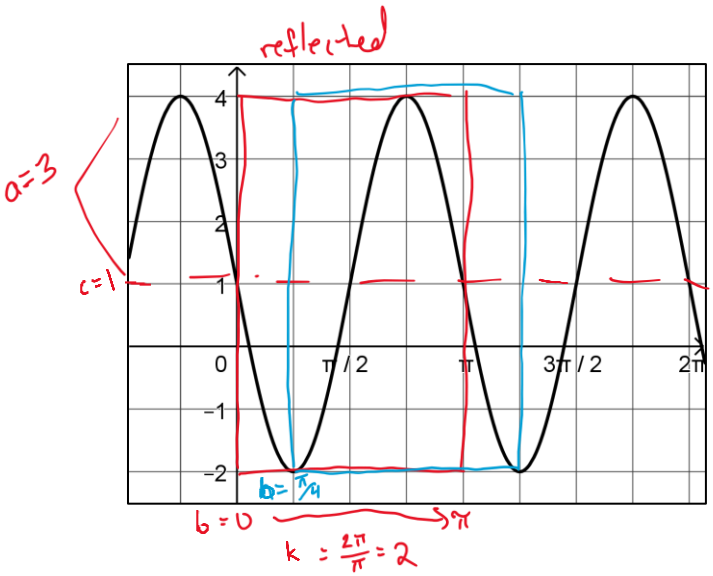
   Amplitude: 3

   Period: π

   Sine Equation: $y=-3\sin(2x)+1$

   Cosine Equation: $y=-3\cos\left(2\left(x-\frac{\pi}{4}\right)\right)+1$

   Equations may vary



3. Midline: $y=-1$

   Amplitude: 4

   Period: 4π

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

   Cosine Equation: $y=4\cos\left(\frac{1}{2}\left(x-\frac{\pi}{2}\right)\right)-1$

   Equations may vary