Consider the function \( f(x) = -1 + 3 \cos \left( \frac{1}{2} x + \frac{\pi}{6} \right) = -1 + 3 \cos \left[ \frac{1}{2} \left( x + \frac{\pi}{3} \right) \right] \).

1. Find each of the following.

   (a) (2 pts) amplitude: 
   
   (b) (2 pts) period: 
   
   (c) (2 pts) phase shift (horizontal translation): 
   
   (d) (2 pts) vertical translation: 

2. (8 pts) Sketch the graph \( y = f(x) \). *Fill out the whole coordinate grid.*

3. (4 pts) Plot and label (with their ordered pairs) the 5 important points in one period.