1. Find the absolute maximum and the absolute minimum for the function $\mathbf{y = 3x^4 - 14x^3 + 250}$ on the interval $[2, 6]$. If one doesn't exist, then be sure to None.

   $y' = 12x^3 - 42x^2 = 6x^2(2x - 7)$

   The critical values are $x = 0$ and $x = 3.5$. Since the interval is $[2, 6]$, don't use the critical value of $x = 0$. Now test $x = 3.5, 2$, and 6

   $x = 2 \quad\quad y = 186$
   $x = 6 \quad\quad y = 1114$
   $x = 3.5 \quad y = 99.9375$

   Absolute Max: 1114

   Absolute Min: 99.9375

2. If $x = -3$ is a critical value for the function $f(x)$ and $f''(-3) = 4 - 78$, classify the critical value as a local maximum, local minimum or neither. If it can not be determined, then tell what additional information is needed.

   the critical value will be a local max.