In this quiz, you will use the six steps we identified in class to sketch a graph of the polynomial $f(x) = x^3 - 6x^2 + 9x + 1$.

1. Find $f'(x)$, $f''(x)$, and the domain of $f$.

2. Find the critical values of $f$. 
3. Make a sign chart that shows the intervals on which $f$ is increasing/decreasing, and identify all relative extrema using either the first or second derivative test (make it clear which test you’re using).

4. Determine the possible locations of inflection points by finding where $f''(x) = 0$ or $f''(x)$ does not exist.
5. Make a sign chart that shows the intervals on which $f$ is concave up/concave down, and identify all inflection points.

6. Sketch the graph of $f$. 