Reading Outline, §4.1

Vocabulary/Definitions

- If $f' > 0$, then f is...
- If $f' < 0$, then f is...
- If $f'' > 0$, then f is...
- If $f'' < 0$, then f is...
- Local minimum or maximum
- Critical point (what are the two meanings?)
- First-derivative test for local maxima and minima
- Second-derivative test for local maxima and minima
- Inflection point
- What is true of f' when f has an inflection point?

Understand

1. Find all critical points of $f(x) = x^3 - 6x^2 + 9x - 21$.

2. Use the first-derivative test to determine if these are maxima or minima.

3. Use the second-derivative test to confirm your results from (2).

4. Find where the derivative of $f(x) = x^3 - 6x^2 + 9x - 21$ has a local maximum or minimum.