Example 1. For the function $f(x) = 0.00001x^4 - 1000x^3 - 10000000x^2$ do the following:

(a) Take the first derivative and find the critical points algebraically.

(b) Take the second derivative and find the inflection points algebraically.

(c) Graph $f(x)$ (use one or more windows that shows all the "interesting" features (in particular it should show the local max/mins and the graph should be close enough that you can read the values) and identify each critical point as a local maximum, minimum or neither