QUIZ 2 - MATH 111 YOUR NAME:____

Read each problem **very carefully** before starting to solve it. Each problem is worth 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

- 1. Consider the function $f(x) = \frac{1}{3}x^3 2x^2 + 3x + 1$.
 - (a) Input this function in your calculator and adjust your viewing window to x-range 0-5 and y-range (-1)-5. Reproduce **carefully** the resulting graph on your paper.

- (b) Find a local maximum and a local minimum of f.
- (c) Over which intervals is the graph increasing and over which is it decreasing?
- (d) Sketch **carefully** the graph of the first derivative of f(x) clearly labeling its zeros and its minimum point.

(e) Find the inflection point and the intervals over which the graph of f(x) is concave up and concave down.