

Student Name: _____ Student Number: _____

Serial No.: _____

Instructor: M. Z. Abu-Sbeih

Math - 132.1

Quiz No. 3

Date: 12-4-2004.

Consider the functions $f(x) = 2x^3 - 9x^2 + 12x$.

- a. find the critical numbers;
- b. find intervals where the function is increasing and those where it is decreasing;
- c. find the local maximum and minimum of the function;
- d. discuss the concavity of the function and find the inflection points;
- e. sketch the graph of the function. Clearly indicate the critical numbers, extrema and inflection points.

Consider the functions $f(x) = \frac{x-1}{x}$..

- f. find the critical numbers;
- g. find intervals where the function is increasing and those where it is decreasing;
- h. find the local maximum and minimum of the function;
- i. discuss the concavity of the function and find the inflection points;
- j. sketch the graph of the function. Clearly indicate the critical numbers, extrema and inflection points.