EC 23 HW - PART A - FOR AUG. 31

Due in hard copy when class resumes on Aug. 31, 2016. Please accomplish this homework individually (no group work allowed). Please consult the relevant chapters in the textbook or in Schaum's Outline.

1. Suppose you have a function y = f(x) such that $y = 4x^2 + 5x$

How would you determine if the function is decreasing, increasing, or constant?

What is the value of this function at x=1? Is it increasing, decreasing, or constant? Explain.

2. Suppose $y = x^3 - 5x^2 + 2x$. What is the value of y at x = 3? Is it increasing, decreasing, or constant. Explain.

3. Define concavity and convexity of a function. If y is a function of x, does concavity/convexity depend on the value given for x? Explain.

4. Test whether the function $y = (5x^2 - 8)^2$ is concave or convex at x = 3.

5. Test whether the function $y = -2x^3 + 4x^2 + 9x - 15$ is concave or convex at x = 3.

6. What is an inflection point? Please give an example.

7. What tests can you perform to determine whether a function has a relative maximum or minimum? Please explain with an example.