WRITE YOUR NAME:

MAC 2233 Homework 2
Due in class, Friday February 2nd
You can use more paper if necessary, but please STAPLE

Question 1. Consider the function $f(x) = 3x^2$.

(a) If x changes from 10 to 10.1, how much does $f(x)$ change by?

(b) Let P be the point on the graph of f where $x = 10$, and let Q be the point on the graph of f where $x = 10.1$. What's the slope of the line joining P and Q?

(c) Let P be the point on the graph of f where $x = 10$, and let R be the point on the graph of f where $x = 10 + h$. What's the slope of the line joining P and R?

(d) What's the slope of the tangent line to the graph of f at the point P?

Question 2. Find the derivative of the function.

$$f(x) = \frac{x^5}{5} + \frac{5}{x^5} + \frac{1}{5x^5} + \frac{x^{47} + x^{48}}{x^5}$$