Worksheet #6, September 11, 2015
Math 221 Lecture EL1

Instructions. Put your first and last name at the top of your paper. Everyone is to do their own worksheet but only one from each group is graded with the score shared. Be sure to show your work and explain your reasoning. All worksheets from each group will be collected. This is a two-sided worksheet!!!

Problem 1 Let \( f(x) = \lfloor x \rfloor \) be the greatest integer function: For all real numbers \( x \), the greatest integer function returns the greatest integer less than or equal to \( x \).

(a) Sketch the graph of \( f(x) \) on the interval \([-0.5, 4.5]\).

(b) List the points in the interval \([-0.5, 4.5]\) where \( f(x) \) is not differentiable, and justify your choices.
Problem 2 Differentiate the functions (Do NOT use the limit definition of a derivative!!) . Show your work and circle the answer.

(a) \( f(x) = 14x^{3/2} \)

(b) \( g(x) = 2e^x - \ln 2 \)

(c) \( h(x) = \frac{3}{\sqrt{x}} + 50x^2. \)