Math 229

Exam 2 Review Sheet

Section 10.4-10.5 Limits and Continuity

Key Topics:

• Understand the definition of a limit.

• Be able to investigate the value of a limit using graphs and tables of values.

• Be able to Find the value of a limit both algebraically and based on a graph.

• Be able to Show that a limit does not exist.

• Be able to determine the value of an infinite limit.

• Understand how to draw the graph of a piecewise defined function.

• Understand the definition of one sided limits, and be able to evaluate them.

• Memorize the 3 part definition of continuity and the 3 types of discontinuities.

• Be able to determine whether or not a function is continuous at a given point

Section 10.6 The Derivative

Key Topics:

• Understanding the idea of the derivative as an instantaneous rate of change (the slope of a tangent line).

• Be able to compute the average rate of change of a function over a given interval.

• Memorize the formal limit definition of the derivative $f'(x)$ and be able to use it to compute the derivative of a function and to compute the slope of the tangent line to a function at a given point.

• Be able to find the equation of the tangent line to a function at a given point.

Section 11.1-11.3 Differentiation Formulas

Key Topics:

• Be able to find the derivative of constant functions, linear functions, and power functions.

• Be able to find the derivative of a constant multiple of a function or the sum or difference of a pair of functions.

• Be able to find the derivative of products and quotients of functions.

• Be able to use the Chain Rule to find the derivative of a composite function.

• Be able to combine multiple differentiation methods to find the derivative of a function.

Section 11.4 Marginal Functions in Economics

Key Topics:

• Understand cost, revenue, profit, supply, and demand functions and how to apply them.

• Be able to find and interpret the practical meaning of *average* cost, *average* revenue, and *average* profit functions ($\overline{C}(x)$, $\overline{R}(x)$, and $\overline{P}(x)$).

• Be able to find and interpret the practical meaning of *marginal* functions for cost, revenue, and profit ($C'(x)$, $R'(x)$, $P'(x)$).

Chapter 10 Review Problems: p. 637-638 # (7, 11, 18, 19, 21, 23, 30, 31, 44)

Chapter 11 Review Problems: p. 725-727 # (1, 5, 9, 11, 17, 20, 25, 29, 52, 57)