

## Math 1100 Final Review

About the test: No notes. Calculators are allowed, but storing notes, etc. on them is cheating. You may not use a cell phone. You must show your work to get credit, so be careful of having your calculator do something you should be doing yourself. Simplify your answers as far as possible. Points are taken off for rounding and labeling errors. Seating during the test is every other seat.

### There are no test corrections on the final.

The grading scale is non-negotiable, no matter how desperate you are for a better grade. Grades are based on performance, not need. I hope you pass, but if you don't, I encourage you to retake the class right away while the material is fresh in your mind. The class is offered this summer. The book will be changing in the fall.

A	93%-100%	B-	80%-82%	D+	67%-69%
A-	90%-92%	C+	77%-79%	D	63%-66%
B+	87%-89%	C	73%-76%	D-	55%-62%
B	83%-86%	C-	70%-72%	F	0%-54%

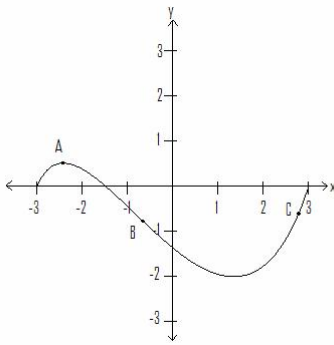
Date	Lecture Topic	Assignment Due (due at the end of class)
Apr 23	7.6	7.5, Reminder: Complete online evaluations
Apr 25	Review	7.6, Reminder: Complete online evaluations
Apr 27	Review	Final Extra Credit Review Part I Reminder: Complete online evaluations
Apr 30 (Mon)	Help Session 2-3 in 129 Sc	Study Day
May 1 (Tues)	Help Session 4-5 in Sc 129	Final Extra Credit Review Part II (notice the change) Due 5pm
May 2 (Wed)	Help Session 4-5 in Sc 129	
May 4 (Fri)	Final 1-2:50pm in Sc 129	Note: You may not take the final at any other time than when your section is scheduled without instructor consent and payment of a fee to the cashier's.

Topics and things to know how to do:

- based on its graph, describe a function in terms of increasing/decreasing, intercepts, asymptotes, concavity, and local/global maximums/minimums
- what the signs of  $f$ ,  $f'$ , and  $f''$  signify
- marginal cost, revenue, profit
- optimization problems relating to cost, revenue, and profit
- product and quotient rules, chain rule
- find the equation of the tangent line to a curve at a particular point
- implicit differentiation (not the same as partial differentiation)
- derivatives of exponential and logarithmic functions
- continuously compounded interest (memorize the formula)
- percent rate of change (memorize), elasticity (formulas provided)
- integrals and definite integrals and their applications
- spread of information by mass media or by word of mouth (formulas provided)
- evaluating functions of several variables
- finding partial derivatives
- interpreting partial derivatives (including marginal productivities of labor and capital)
- using partial derivatives and the 2<sup>nd</sup> derivative test (provided) to optimize
- using Lagrange multipliers to optimize (memorize how to do this)
- finding the best fit line using the method of least squares (formulas provided)
- use a best fit line to make predictions
- given a scatter plot, determine which type of regression (linear, exponential, logarithmic, Pareto) to use (you don't need to actually find the equation)

Extra Credit Review Part I (15 points) Due Friday, April 27, at the end of class.

- 2.1: 6,18,34
- Fill in the blanks with +, -, and 0 based on the graph of  $f$  below and the properties of  $f$  and its derivatives at the indicated points.



- $f'$  is \_\_\_\_\_ at A.
- $f$  is \_\_\_\_\_ at B.
- $f''$  is \_\_\_\_\_ at C.

- 2.6: 15
- 2.7: 9,14
- 3.1: 6,18,32
- 3.2: 11,20,46
- 3.3: 7,39
- 4.3: 4,16,25,34
- 4.5: 2,3,10,17,20,25,32
- 4.6: 24

Extra Credit Review Part II (15 points) Due Tuesday, May 1, by 5pm (notice the change) You may slide it under my office door at any time prior to 5pm.

- 5.2: 2,7,13,16,21
- 5.3: 6,9,15,21a
- 5.4: 11,12
- 6.1: 24,25,28,48,51
- 6.3: 26,27,37,38,40a
- 7.1: 4,11
- 7.2: 3,6,8,15,26a,27
- 7.3: 18,25,31
- 7.4: 4,14
- 7.5: 10,14