

Math 1100-5
Fall 2004
Review for Test II

Information

Exam II will be scored out of a total of 120 points: 90 points are possible on the in-class portion of this exam, 40 points are possible with take-home essay portion. All essays will be due on exam day *without exception*. The in-class exam will cover material in Sections 9.8-9.9, Chapter 10, Sections 11.1-11.5 The exam will consist of a mixture of true and false questions, computation, and application problems. You will have the entire class period to take the exam. Please bring a writing implement and scratch paper will be provided.

The exam is designed so that you will *not* need to use a calculator (meaning, I won't test you on your ability to compute $\sqrt{5}$ to 6 decimal places). Any additional test aids other than a calculator (such as a sheet of formulas) will *not* be allowed. To offset those that have the more sophisticated calculators, simply writing an answer down to a complicated problem will result in a loss of points, even if the answer is correct. The final judgment of what is "complicated" will be up to me, so it behooves you to show your work and ideas. Technology should be an aid and not a crux, and using a graphing calculator in an unfair manner really only shortchanges your ability to show me how you have mastered the material.

I am more interested in if you understood the ideas and concepts and can apply them to solve problems. With that said, if you worked through the homework, understood the lectures, read your textbook, and asked questions, you should be well prepared. For those who would like a more specific list, I expect you to understand/know the following concepts:

- Computing higher order derivatives.
- Finding vertical and horizontal asymptotes of a function.
- Determining where a function is increasing/decreasing.
- Finding critical points, horizontal points of inflection, and maxima/minima.
- Determining where a function is concave up/concave down.
- Finding inflection points.
- Using information from the first and second derivatives to reconstruct the graph of a function.
- Applications in finding maxima/minima (optimization, minimizing average cost, etc).
- Computing derivatives with logarithmic and exponential functions.
- Implicit differentiation and finding maxima/minima, equations of tangent lines with implicit functions.
- Related rates problems.