

Spring 2006 MAT220 Final Exam Study Guide

The final exam will be multiple choice. As a result you will be required to purchase a **GREEN** ScanTron Form from the book store. They cost \$0.20 + tax. Even though the final is multiple choice, you will still be required to show work with correct notation. I will be checking that you show work.

There will be more than one form of the final so you must put the color of your test on the ScanTron so I use the correct key to grade your final.

The final exam will have 2 parts. On Part 1 there is no calculator allowed. On Part 2 a calculator is allowed. You will be required appropriate work for each problem. I will be checking work as well as your answers. Part 1 will cover the more basic differentiation and integration problems. Part 2 will cover everything else.

Final Exam Topics

Chapter 2:

1. Find limits analytically.
 - a. Direct Substitution
 - b. For indeterminant forms: Factor, Simply, Rationalize
 - c. Special Limits
 - d. Limits at infinity
 - e. One sided limits
2. Discuss and classify continuity as removable or nonremovable.

Chapter 3

1. Find derivatives using the following techniques
 - a. Product and Quotient Rule
 - b. Chain Rule
 - c. All basic differentiation rules
 - d. Implicit differentiation
2. Find the slope of function at a given point.
3. Using the position function, find the velocity and acceleration.

Chapter 4

1. Use the first and second derivative tests to determine the following
 - a. Critical numbers
 - b. Intervals on which a function is increasing or decreasing
 - c. Relative extrema
 - d. Concavity
 - e. Points of Inflection
2. Optimization problems
3. Differentials
 - a. Use differentials to estimate max error (propagated error)

Chapter 5 Topics

1. Evaluate definite and indefinite integrals
 - b. Basic Integration Rules
 - c. All methods discussed in Chapter 4
2. Find the average value of a function over a given interval.