

MA-161 (F,07)  
Final Exam Information

GENERAL INSTRUCTIONS: Problems 1, 2, 3, and the picture for Problem 10 are to be done on the test paper. All the other problems are to be done on the blank paper I've provided. Be sure you number the pages and the problems clearly.

**Answer all problems in sentences**, even those requiring a numerical or formulaic answer. (For example, if you were asked to differentiate  $y = x^2$ , your answer would be written in the sentence  $y' = 2x$ .) And be sure you've answered the question that was asked.

Remember that, for **extreme value problems**, you must define variables, discuss the nature of extrema (The problem may tell you explicitly that you should use the Second Derivative Test.), answer in sentences and include the **units of measurement**. (Units of measurement are included in all applied problems.)

In all application problems, you must answer the questions in sentences and include units of measurement.

Use notation and symbols correctly. **Show all your work and explain what you're doing**. Your explanations will be graded.

If you use your numerical integration program to approximate a definite integral, tell that you are doing so and tell which method you're using (left, right, midpoint, trapezoid) and tell the value of  $n$ .

When you are asked to give an **"exact" value**, you are **not** being asked for a decimal approximation given by your calculator. Your answer will probably involve a fraction, or a root, or  $\pi$ , or  $e$ .

You may use your Precalculus Formula Sheet with Differentiation Formulas and your graphing calculator, including your numerical integration program. Also, if you need a formula or can't remember how to do something, ask me and I'll (possibly) tell you.

**PLEASE: DO NOT FORGET TO USE THE PRODUCT RULE AND THE CHAIN RULE WHEN THEY APPLY!**

The numerical values of the problems are given on the test paper. Problems 1 – 11 are worth a total of 275 points. Please note that Problem 8 is worth 40 points. If you can't do it, be sure to try an alternate problem.

There are seventeen EXTRA CREDIT problems, some of which are worth considerable EC points. The EC problems are worth about 370 points in total. These will be used to improve your score on this test. Or they may be used to improve your score on the unit from which they came if your score on that unit needs improving. Therefore, if your score on some unit was very low but you've now mastered the ideas in that unit, it may be beneficial to do a number of extra credit problems from that unit.