Exam Information. The final exam will be on **Monday, December 8, 2003 from 6:00PM - 9:00PM (3hrs) in the Fieldhouse.** You will **not** be allowed to bring in any notes, use the text book, or use a calculator. If a question involves a calculation you may leave it in an unexpanded form, e.g., you can write 5^4 instead of 625, or $\sqrt{10}$ instead of 3.1..., etc.

You must bring you Student ID card.

Material Covered. The exam will cover all the material discussed in the course. Please refer to your handouts from the midterms for the material you will need to know on Chapters 1 - 4.5 (handouts for the previous tests can be obtained from the class webpage). The material you will need to know about Sections 4.6-4.8, 4.10-4.11 of Chapter 4, Sections 5.1 - 5.3 of Chapter 5, and Section 6.1 - 6.4 of Chapter 6 is given below.

1. Section 4.6. Know what is meant by an absolute maximum or minimum, and how to find these values on a closed interval. Be able to do optimization problems similar to the ones done in class.
2. Section 4.7. Know the relationships between the displacement, velocity, and acceleration functions. Also know what is meant by speed, and the interpretation of concavity.
3. Section 4.8. Know how to do related rate problems. (You can count on at least one question of this type.)
4. Section 4.10. Know how to apply (and when to apply) L'Hôpital's rule.
5. Section 4.11. Know the definition of the differential of x, and the differential of y, and how to calculate dy.
6. Section 5.1. Be able to integrate problems like those given for homework in this section.
7. Section 5.2. Know how to use integration to pass from the acceleration function to the velocity function and displacement function.
8. Section 5.3. Know how to use substitution to evaluate the indefinite integral. Be able to do problems like those that we did in class, and like those in the homework.
9. Section 6.1. Know how to use sigma notation, and do problems like we did in class.
10. Section 6.2. Read the material about Problems 1 and 2 to understand where the definite integral comes from.
11. Section 6.3. Know the definition of the definite integral. You do not have to do calculations like those presented in this section, that is, calculations involving the limit of sums.
12. Section 6.4. Know the statement of the Fundamental Theorem of Calculus, and know how to use the theorem to calculate definite integrals.

Test Structure. The test will cover all of the material discussed in the course, but it will focus predominantly on the material since the last midterm.

The Weighting of the Exam. When I calculate the final grade, I will weigh the exam in two different ways, and take the higher of the two grades.

First Way. I will use the weighting as described in the course handout, that is, the exam will count for 40% of your final mark.

Second Way. I will not use the lower of your two midterm marks, but instead, let your exam count for 65%.

For example, suppose you got 7/10 on your homework, and your first test (after re-weighting) was 20/25 and the second test was 12/25. Suppose you received 48/80 on the final (assuming the exam was out of 80 points). For the first way, your exam would be re-weighted to be 24/40, and you would have a grade of

$$\frac{7}{10} + \frac{20}{25} + \frac{12}{25} + \frac{24}{40} = \frac{63}{100}.$$

For the second way, your exam would be re-weighted to 39/65, and which would give me a grade of

$$\frac{7}{10} + \frac{20}{25} + \frac{39}{65} = \frac{66}{100}.$$

Your final grade would then be the highest of the two, i.e., 66%.

Special Note: I will out of town from Dec. 3-7, so I will not be able to answer questions during this time. I will be in my office the day of the exam to answer questions.