

**MA 241-005 (Spring 2006)**  
**Test 3 Study Guide**

**General Info.**

- Test Date: Monday, February 27, 2006
- Test 2 will cover Chapter 6 – Sections 1-5 and Chapter 7 – Sections 1 & 2
- You are allowed to have a non-graphing, non-programmable calculator; however, one will is not required. You will not be allowed to use your cell phone's calculator.
- Review the examples done in class, on weassign, and those on the review sheet.

Section 6.1

- Know the definition for finding the area between two curves
- Be prepared to sketch the region by hand before calculating the area
- Don't forget that some regions are best considered by in integrating in terms of  $y$ .

Section 6.2

- Know how to calculate the volume of a solid using the disk or washer method. Your axis of revolution could be the  $x$ -axis, the  $y$ -axis,  $x=c$  or  $y=c$ .

Section 6.3

- Know the formulas for arc length when given parametric equations or regular functions and how to use them.

Section 6.4

- How to calculate the average value of a function on a given integral

Section 6.5

- Be able to solve work problems, especially problems dealing with spring and emptying a liquid out of a tank.

Section 7.1

- Know general definitions of the following (you won't have to write the definitions but you will need to know what they are when used in a sentence):
  - Order
  - Equilibrium solution
  - General solution
  - Particular solution
  - Initial value problem

Section 7.2

- Direction Fields (or Slope Fields)
  - Given a directional field, plot a particular conditions when provided initial conditions
  - Determine equilibrium solutions
- Euler's Method
  - Know the formula and how to use it when given a first order initial value problem
  - Approximate values for a solution using Euler's Method

**Review integration techniques from Chapter 5; you may have to use them for various integrals.**