Basics

- Thursday 9:45-11:15
- Bring a 3×5 notecard. Writing front and back.
- Cell phones should be either in a zippered pocket of backpack or facedown on your desk, not in your pocket or lap. Smart watches should be in backpack.
- You will be required to sit where there is an exam (ie spread out).
- There will be two versions of the exam.

Sections Covered

- Section 2.1 Areas between Curves
  Given a region defined by various familiar curves set up and evaluate a definite integral that calculates the area of the region.
- Section 2.2 Volumes by Slicing (disks, washers or defined cross-sections)
  - Given the base and a characterization of the cross-sections of an object, find its volume.
  - Given a region R in the xy-plane and an axis or rotation (x- or y-axis), determine the volume using disks or washers.
- Section 2.3 Volumes of Revolution using Shells
  Given a region R in the xy-plane and an axis or rotation (x- or y-axis), determine the volume using shells.
- Section 2.4 Arc Length of a Curve and Surface Area
  - Given a curve C in the xy-plane, find the arc length of C.
  - Given a curve C in the xy-plane and an axis of rotation (x- or y-axis), find the surface area of the volume of rotation.
- Section 2.5 Physical Applications
  - Work. Including Hooke's Law and pumping fluid out of a container.
  - Mass.
- Section 2.6 Moments and Centers of Mass
  Find the center of mass of 1- and 2-dimensional regions.
- Section 2.7 A Second Look at Exponential and Logarithmic Functions
  Nothing from this section will appear directly. You should know how to integrate and differentiate exponential and logarithmic functions as you did in Calc I.

- Chapter 3 Integration Techniques.
  For each technique, you should be able to recognize what integrals are suitable to the technique and know how to implement this technique.
  - Section 3.1 Integration by Parts
  - Section 3.2 Trigonometric Integrals
  - Section 3.3 Trigonometric Substitution
  - Section 3.4 Partial Fractions

Other Considerations

- Employ good test-taking skills including moving on from any problem that is either taking too long or seems to have (temporarily) stumped you.
- Walk in with the assurance that every problem is something doable with the skills taught in the class and learned in homework, quizzes, and/or in-class worksheets.
- There will be integrals that you are expected to set up but not evaluate. You need to read the directions for the problems and follow them.
- You are expected to reasonably simplify your answers, including both numerical answers and integrals you are only required to set up.
- Be prepared to use all of the integration techniques we have learned.
- You work, including its organization, matters.
- Don't write things you know are incorrect but don't leave anything completely blank.