

Assignment 3: The Fundamental Theorem of Calculus Weeks 3 and 4

In class on Wednesday, [Day 7]:

- We began Chapter 7: *The Fundamental Theorem of Calculus* with a general lecture introducing important ideas in Section 7.1. In particular, we looked at the problem of calculating an average temperature, and we investigated a strategy for estimating the distance traveled from the graph of the velocity function. An important idea is that distance = velocity \times time, and graphically this looks like we are using areas of rectangles to estimate distance. (See the figures in Section 7.1.5.)

In class on Friday, [Day 8]:

- Project 1: *Sky Diving* is due at the beginning of class.
- We will continue the lecture on important ideas of Chapter 7. I will begin in the middle of Section 7.1, and continue into Section 7.2.
- Continue your work on the Web Work (<http://webwork.maa.org/webwork2/>) problems that have been assigned. You may work together on these problems, but to get credit each of you must log into Web Work under your own name. Do at least four of the six problem sets for Section 5.6 (A – F). These are due on February 8, when the answers will become available. (You will continue to be able to see these problems, attempt them, and check your work, but you will not be able to submit them for credit after 5:00 pm on February 8.)
- A new set of Web Work problems (Chapter 6, A – D) will be open on February 5, and due by February 15. You should attempt all four of these sets of problems; they will give you practice finding antiderivatives – and are among the kinds of problems that will appear on the upcoming test. (Test 1 is scheduled for February 17; it is not too soon to begin studying for it.)

In class on Monday, [Week 4, Day 9]:

- Chapter 7: *The Fundamental Theorem of Calculus*
 - We will work in groups on the Activities and Checkpoints of Sections 7.1 and 7.2.
- Project 2: *The Area of Crater Lake*
 - This project is an interesting application of the subdivide-and-conquer strategy introduced in Section 7.1.
 - This project and its grading rubric will be available as a separate handout on Monday, February 8. It will be due on Monday, February 15.

In class on Wednesday and Friday, [Days 10 – 11]:

- We will begin work in Chapter 8, looking at important ideas in Sections 8.1 and 8.2. While the problems we investigate in this section are grounded in physics, they give us tangible examples of the meaning of the definite integral.
- The Study Guide for Test #1 (including Benchmark 1) will be available after Friday's class. Test #1 is scheduled for Wednesday, February 17.