

Reading Assignment for Section 3.11

MATH 130: Calculus I, Section 4

Spring Semester 2017

Follow the general guidelines for the Reading Assignment (the salmon colored handout).

Be sure to include and label all four standard parts 1,2,3,4 of the Reading Assignment in what you hand in. Be sure to **staple** together pages if you have more than one, and include your **name** at the top of the page. Neatness is appreciated!!!

Due: at the beginning of class on Monday, March 27th

Read:

Section 3.11: Related Rates, pages 224-227

Notes: This reading looks at applying what we have been learning about instantaneous rates of change, implicit differentiation and more to real life circumstances!

Remember that your answers should include complete sentences for every question. Be sure to answer all parts of each question!

Reading Questions for part (1), Response:

- a) What variable are we differentiating with respect to in this section and what does it represent?
- b) Explain why the term *related rates* describes the problems of this section.
- c) The first step in a related rates problem is to organize the information you are given. **First you draw a diagram, choose and define your variables, identify the rates of change you know, and write down for which rate of change you are looking.** The book doesn't always do all of this before it moves on to the next steps, but they should and we will! One reason we should is because the equation we choose to use should be based on what we know and for what we are looking. Take a look at example 2 on page 225 and write down the complete first step ("Organize your information") as outlined above. All of this information is listed in the solution, but not all at the beginning. Really organize the information so that you would be able to find each detail you might need if you were to do the whole problem. **Do not do the other steps, just the first step.**

Remember parts 2-4 on the salmon handout!

Optional, but highly recommended: Make flashcards for material in Section 3.11. Sample problems, steps for related rates questions, etc. could be valuable on flashcards.