

Section 3.11: Related Rates

MATH 130: Calculus I

Due: Friday, March 29, 2019 at 12:20pm

Name (Print): _____

After reading Section 3.11 (pages 227-230 in the text), respond to the following questions **on this handout**. Be sure to staple your pages together before turning it in. **You must answer all parts to all questions to earn full credit!!!** See the salmon homework guidelines handout for details. You are encouraged to take additional notes wherever you are keeping your class notes.

Response Section

1. What variable are we differentiating with respect to in this section and what does it represent?
2. Write out the Steps for Related-Rates Problems written on page 228.
3. Explain why you think the term *related rates* describes the problems of this section.

4. 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 pages 228-229 and write down the complete first step ("Organize your information") as outlined in bold above (note there are four parts to this step). 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.**

Questions/Exercise Section

5. Write down at least two questions you have on the reading. OR if you have NO questions, do exercise 6 in Section 3.11 (page 231). Be sure to show the diagram and set up, and all other steps for full credit! See the salmon homework guidelines handout for details.

Reflection Section

6. Write **two or three** sentences reflecting on the progress of your recent work in the course. See the salmon homework guidelines handout for details.

Time Section

7. How much time did you spend on this reading assignment? _____