

Reading Assignment for Section 4.1

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 Wednesday, March 29th

Read:

Section 4.1: Maxima and Minima, pages 236-242

Notes: In this chapter we will look more deeply into what information the derivative can tell us about the original function. This first section focuses on how the derivative can help us find places where our function has extreme values – locally and globally.

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: (Note that answers to these need not be long. One or two complete sentence will suffice for all except perhaps f.)

- a) Explain in **your own words** what a local maximum is.
- b) What do we need to know about a function to know that it has an absolute maximum or minimum? In other words, how can we guarantee that the function has one? Explain briefly.
- c) What is a *critical point*? Note that this is also called a *critical number* in some texts.
- d) Is it true that if f has a local maximum or minimum at c , then $f'(c) = 0$? Explain.
- e) Is it true that if $f'(c) = 0$, then f has a local maximum or minimum at c ? Explain.
- f) Explain the procedure to find the maximum and minimum values of a function on a closed interval.

Remember parts 2-4 on the salmon handout!

Optional, but highly recommended: Make flashcards for material in Section 4.1. Sample problems, definitions of new terms, theorems, etc. could be valuable on flashcards.