

Reading Assignment for Section 4.7

MATH 131: Calculus II, Sections 2 and 3
Fall Semester 2015

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 at least the first page. Neatness is expected!!!

Due: by the beginning of class on Monday, November 2nd

Read:

Section 4.7, pages 297-307: L'Hôpital's Rule!! Do the Quick Checks along the way! Check your answers to them at the end of the Exercises for Section 4.7! THIS SHOULD BE REVIEW!!!

Notes:

Yes, we are going back to limits! Why? Do you remember when we said that certain integrals are called improper and do not exist as definite integrals like $\int_{-1}^1 \frac{1}{x^4} dx$? It would be interesting to have an idea whether the area under these curves actually approaches a fixed number or not as an improper integral even if not as a definite integral. How can we tell? Using limits! But the limits we deal with are usually indeterminate. There are some little tricks for some indeterminate forms, but they don't always work. In this section we remind ourselves how and when we can apply the technique known as l'Hôpital's Rule.

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

Reading Questions for part (1):

- a) Why are some forms of limits called indeterminate?
- b) List each of the different types of indeterminate forms for limits that are discussed in this section (you should have about 4-5 categories of forms), and say briefly what approach the book says we can take for each of them. Feel free to also use your memory and notes from calculus I to answer this question! You should be able to be very detailed and precise since this is review!!! I will expect more in terms of correctness than in other reading assignments!
- c) What does the book say about blindly using l'Hôpital's Rule whenever we see the limit of a quotient? That is, are we always allowed to apply l'Hôpital's Rule if we are taking the limit of a quotient? Why or why not?

Remember parts 2-4 on the salmon handout! **Reread the directions for these parts to be sure that you are answering the questions.** If you have lost your salmon handout, there is a link on our website to the Homework Guidelines.