Section 8.5: The Ratio, Root and Comparison Tests
MATH 131: Calculus II, Section 2

Name (Print): ―――――――――――――

Due: Wednesday, November 28, 2018 at the beginning of class

After reading Section 8.5 (pages 641-647 in the text), respond to the following questions **on this handout**. Be sure to staple your pages together before turning it in if they are not double sided. **You must answer all parts to all questions to earn full credit!!! Also, use FULL SENTENCES to answer questions that require words.** See the salmon homework guidelines handout for details.

Response Section

1. State Theorem 8.14: The Ratio Test.

2. (a) Given the examples in the text, for what kinds of series is the Ratio Test especially useful?

   (b) Is the Ratio Test ever not helpful? If so, when? If not, why not?

3. State Theorem 8.15: The Root Test.

4. (a) Given the examples in the text, for what kinds of series is the Root Test especially useful?

(b) Is the Root Test ever not helpful? If so, when? If not, why not?

5. State Theorem 8.16: The Comparison Test.

6. Draw Figures 8.32 and 8.33 to see why the Comparison Test makes sense. In each Figure, mark which series is the original series for which you are trying to determine convergence. Notice the relationship between the series and when you are trying to prove convergence versus divergence.

7. State Theorem 8.17: The Limit Comparison Test.

8. With what series might we choose to compare our original series when applying the Comparison Tests? Check out the examples for ideas. Why choose these series?

9. In order to have enough room for this question, I am moving it to the fourth page! Be sure to go there and make your flow chart!

Questions/Overview Section

10. Write down any **questions** you have on the reading. Be as specific as possible! See the salmon homework guidelines handout for details.

Reflection Section

11. Write **two or three** sentences reflecting on the process of your work so far in the course. See the salmon homework guidelines handout for details.

Time Section

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

9. Make a flow chart for solving series questions similar to the one I gave you for integration. Include all the techniques discussed in Sections 8.3-8.5. Remember that this should include questions that lead you to different techniques, and that this should be a guideline realizing that there are always exceptions. The "Guidelines" at the end of this section is a good place to check your ideas for the chart, but it would be useful to your understanding to see how much you can put together without using those guidelines first.