Section 4.7: L'Hôpital's Rule

MATH 130: Calculus I

Due: Friday, April 19, 2019 at 12:20pm Name (Print): _____

After reading Section 4.7 (pages 301-310 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 does it mean for a limit to be an indeterminate form? Write a full sentence to explain. This question is interested in WHY the forms are called indeterminate more than what the forms are!

2. State l'Hôpital's Rule (Theorem 4.12).

3. Here is a limit we have solved before: $\lim_{x\to 2} \dfrac{x^2-4}{x-2}$. Solve it

   (a) with our old tricks

   and (b) using l'Hôpital's Rule.

4. To what indeterminate forms can l'Hôpital's Rule be applied directly?

5. Write down the procedure at the bottom of page 306 for evaluating limits that are indeterminate powers.

6. What are some pitfalls in using l'Hôpital's Rule? In particular, what could happen if we use it blindly whenever we see the limit of a quotient?

Questions/Exercise Section

7. Write down at least two questions you have on the reading. OR if you have NO questions, do exercise 36 in Section 4.7 (page 311). Be sure to show ALL steps and remember your limit signs for full credit! See the salmon homework guidelines handout for details.

Reflection Section

8. 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

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