Section 3.2: The Derivative as a Function

MATH 130: Calculus I

Due: Wednesday, February 27, 2019 at 12:20pm Name (Print): _____

After reading Section 3.2 (pages 140-148 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. Write out the definitions of the derivative function and differentiable.

2. There are two primary ways to notate the derivative of a function $y = f(x)$. What are they? What are several other notations that are used?

3. Suppose that $f(x)$ is a line with a slope of -3. Draw the graph of $f'(x)$. Then write one sentence explaining why this is the graph.

4. If $f'(7) = 0$, what does that tell you about the original function $f(x)$? Write a complete sentence to explain.

5. Write out Theorem 3.1 on page 146. This is a VERY important theorem!!!

6. Is it possible for a function to be continuous at $x = 2$, but not differentiable at $x = 2$? If so, draw a graph of such a function. If not, write a full sentence explaining.

7. When a function is not differentiable at a point $x = a$, one of three things must be happening. What are they?

Questions/Overview Section

8. Write down at least two questions you have on the reading. OR if you have NO questions, do exercise 24 in Section 3.2 (page 149). Note that the directions say to use limits! Show all your work for a full solution/full credit. See the salmon homework guidelines handout for details.

Reflection Section

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

Time Section

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