

Reading Assignment for Section 3.4

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 1st

Read:

Section 3.4: The Product and Quotient Rules, pages 153-159

Notes: In the last section we learned some basic differentiation rules that we can use to avoid using the definition of the derivative to differentiate in some cases. There we looked at sums and differences, but we did not look at products or quotients. As you will see, it is not as straightforward to deal with products as it is to deal with sums. However, there is a way! Read on!

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:

a) (i) Is the derivative of a product the product of the derivatives? What is the Product Rule? (ii) On page 154 in our text they prove the Product Rule. Work through it and see if it makes sense. Then write down the proof filling in details, adding comments (and/or questions) that help the reader understand the process (and/or describe to me where you found it confusing).

b) Give TWO ways to differentiate $f(x) = (x^2 + 4)(x - 2)$. Show your work for each method clearly.

c) Give two ways to differentiate $f(x) = \frac{1}{x^{13}}$. Show your work for each method clearly.

Remember parts 2-4 on the salmon handout!

Optional, but highly recommended: Make flashcards for material in Section 3.4. Certainly you should have one for the product rule and one for the quotient rule!