

Reading Assignment for Section 5.2

MATH 131: Calculus II, Section 1

Spring Semester 2014

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 appreciated!!!

Due: by the beginning of class on Monday, January 27th

Read:

Section 5.2, pages 320-331: Definite Integrals

Notes:

We talked about how to estimate the area under the curve of $f(x)$ when f is a positive function. What happens if we use the same procedure but f is a negative function? How do we interpret our results? How do we get better estimations? Can we actually find the exact area under the curve? Answer these questions and more in the reading! Figure 5.21 is a nice accompaniment to the description of the notation on page 324.

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) Suppose $f(x) < 0$ for all x on the interval $[a, b]$. If you evaluate a Riemann sum as we did in Section 5.1, i.e find $\sum_{k=1}^n f(x_k)\Delta x$ where n is a positive integer, what do you get numerically? What does this mean geometrically? Draw a diagram with your explanation.

b) How is a definite integral defined? What does a definite integral represent?

c) Use a diagram and geometry to explain what the value of $\int_a^b 4dx$ is.

Remember parts 2-4 on the salmon handout!