NOTE: The instructions for these assignments are located on our course webpage. Be sure to reread them often.

R21 - Due by 10am W 11/5:

- To Read: Sections 4.2
- Email Subject Line: Math 211 11/5 Your Name
- Reading Questions:
  1. For a function \( f(x) \) defined on an interval \([a, b]\), explain the distinction between a local maximum point and a global maximum point of \( f \).
  2. What are critical numbers?

R22 - Due by 10am F 11/7:

- To Read: Sections 4.3,4.4
- Email Subject Line: Math 211 11/7 Your Name
- Reading Questions:
  1. If we can create graphs of functions on our calculators or on Mathematica, why do we still need to learn how to use the derivative to learn about the shape of the function’s graph?
  2. How are the signs of \( f' \) and \( f'' \) related to the shape of the graph of \( f \)?

R23 - Due by 10am M 11/10:

- To Read: Sections 4.6
- Email Subject Line: Math 211 11/10 Your Name
- Reading Questions:
  1. True or False: In this section, the calculus is the easy part – it’s the problem formulation that takes most of the work.
  2. Think of a field-of-study outside mathematics (presumably, one that you know something about), then give an example from that field of a quantity that someone would like to optimize (i.e. maximize or minimize).
R24 - Due by 10am F 11/14:

- **To Read**: Sections 5.1
- **Email Subject Line**: Math 211 11/14 Your Name
- **Reading Questions**:
  1. Briefly describe the *area problem*.
  2. Briefly describe the *distance problem*.
  3. How are these two problems related?

R25 - Due by 10am M 11/17:

- **To Read**: Sections 5.1,5.2
- **Email Subject Line**: Math 211 11/17 Your Name
- **Reading Questions**:
  1. What is a Riemann sum? (There’s no need to get very technical here.)
  2. Are left-hand sums and right-hand sums also considered Riemann sums?

R26 - Due by 10am W 11/19:

- **To Read**: Sections 5.2
- **Email Subject Line**: Math 211 11/19 Your Name
- **Reading Questions**:
  1. How is the definite integral related to a Riemann sum?
  2. If $f(x)$ is an increasing function on the interval $[a, b]$, briefly describe how you can get an upper bound on the value of the definite integral $\int_a^b f(x)\,dx$. How can you get a lower bound?

R27 - Due by 10am M 12/1:

- **To Read**: Sections 5.3
- **Email Subject Line**: Math 211 12/1 Your Name
- **Reading Questions**:
  1. What is the difference between a *definite* integral and an *indefinite* integral?
  2. How many antiderivatives does a given function $f$ have? How are they related to one another?
  3. According to the Evaluation Theorem, what is the exact value of the definite integral $\int_0^1 e^x\,dx$?
R28 - Due by 10am W 12/3:

• **To Read:** Sections 5.4

• **Email Subject Line:** Math 211 12/3 Your Name

• **Reading Questions:**

  1. How is the second part of the Fundamental Theorem of Calculus related to the Evaluation Theorem from Section 5.3?

  2. What does the author mean when he says that differentiation and integration are inverses of each other?