

Midterm #1 Review

Bugs Bunny and Elmer Fudd



Greetings, calculus lovers! It's time for a lovely handout on the upcoming exam!!!! For those of you in the Tuesday/Thursday class, the exam will be on Tuesday. For those in the Monday/Wednesday class, the exam will be Wednesday! Enjoy this handout!

1. Section 4.3: Riemann Sums and definite integrals. This section really just is a carbon copy of the last section, except they introduce the notation for a *definite integral*: $\int_a^b f(x)dx$ is to stand for the area underneath the curve $f(x)$ between the values $x = a$ and $x = b$. Accordingly, there are several properties that will be of use to us as we try to evaluate definite integrals, see the class notes, or pages 276-278.
2. Section 4.4: The Fundamental Theorem of Calculus. This is the best section ever. There are two parts to this theorem that relates antiderivatives to area. PLEASE NOTE: For the exam, I will only require that you are able to demonstrate your knowledge of the part of the fundamental theorem of calculus that asks you to evaluate $\int_a^b f(x)dx$. I call this the second fundamental Theorem, I believe the book calls it Theorem 4.9 on page 282. Any of questions 5–42 will provide excellent practice for the exam.
3. General Suggestions. Please keep in mind that the only part of the Fundamental Theorem of Calculus that Corey expects you to demonstrate is how to find the area underneath a curve using antiderivatives. Nothing on the first exam will ask you about taking the derivative of functions like $F(x) = \int_a^x f(t)dt$. Please also use your quiz to help you study, there will be a lot of similar types of questions. Lastly, please remember that there are some problems that Corey didn't ask about on the quiz that he still may ask you about on the exam, but nothing that you wouldn't have already seen on your homework. Oh, and ROCK ON!!!