

General Info

Exam 2 is scheduled for **Tuesday, Dec 8th**. It will cover material from Chapters 4 and 5. Specifically Sections 4.9 through 5.5. There are 8 problems on the exam. The exam is closed book/notes. You may use a calculator as long as it isn't a TI-89 or any other calculator that does algebraic manipulation. You may use the entire class to do the exam. To receive full credit you must show your work.

Chapter 4

From Chapter 4 you should be able to work the type of problems below, which include the following:

- 1) Anti-differentiation problems

Chapter 5

From Chapter 5 you should be able to work the type of problems below, which include memorizing and knowing how to apply the following:

- 1) The area A under a graph of a continuous function f is the limit of the sum of the areas of approximating rectangles.
- 2) Theorem 4 in Section 5.2 – If f is integrable on $[a, b]$, then

$$\int_a^b f(x) dx = \lim_{n \rightarrow \infty} \sum_{i=1}^n f(x_i) \Delta x, \quad \text{where } \Delta x = \frac{b-a}{n} \quad \text{and} \quad x_i = a + i \cdot \Delta x$$

- 3) Summation Properties and $\sum_{i=1}^n i = \frac{n(n+1)}{2}$. Other summation formulas will be provided.
- 4) Properties of Integrals
- 5) The Fundamental Theorem of Calculus
- 6) Table of Indefinite Integrals.
- 7) The Net Change Theorem
- 8) Integrals of Symmetric Functions
- 9) Substitution Rule for both indefinite and definite integrals

Exam 4 Directions

These are excerpts from the actual problems on the test

- 1) Find f . You will be given f' or f'' and perhaps some other conditions for f .
- 2) Circle **T** if the statement is true or **F** if the statement is false.
- 3) Use the form of the definition of the integral (Theorem 4 in Section 5.2) to set up and evaluate the integral using a limit of a Riemann Sum.
- 4) Sketch a graph of the piecewise-defined and then evaluate the integral by using properties of integrals and interpreting it in terms of areas.
- 5) Evaluate the integral. You will be given integrals that may or may not need a u -substitution.
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- 7) Find a general form of the indefinite integral.
- 8) Find a general form of the indefinite integral.
- 9) Extra Credit (a related rates problem)

Chapter 4 Review Problems

True/False Quiz	Page 261	Problems 18–20 all
Exercises	Page 262–264	Problems 65–75 odd

Chapter 5 Review Problems

True/False Quiz	Page 409	Problems 1–6 all, 9–15 all
Exercises	Page 409–411	Problems 3, 9–35 odd, 56, 57