Math 1010 Exam 5 Practice Questions

Exam 5 covers sections 5.1, 5.2, 5.3, 5.4, 5.5, 6.1, 6.2, 6.4, 6.5

1. Chapter 5 Review, p. 430: T/F Quiz 1 - 6, Exercises 7, 9 - 33 odd, 43, 45, 59.

2. Chapter 6 Review, p. 468: Exercises 1, 2, 6, 7, 8, 9, 15, 27, 28, 30.

3. Your exam will contain FOUR Basic Skills No Partial Credit problems (BSA questions). One each from 5.3, 5.4, 5.5 and 6.1.

4. There will be 4 partial-credit questions on the exam.

5. There will be 4 - 5 TF or Multiple Choice questions on the exam. The questions that do not come from T/F Quiz on p. 430 will either deal with properties of integrals OR selecting the correct integral for problems from 6.2, 6.4 and 6.5.

6. For Section 5.1: You may be asked to use rectangles to estimate the area under the curve (problems 2, 3, 4, 5) or find an approximation to the distance traveled given velocity information either in a table of values or as a graph (problems 11, 12, 15).

7. For Section 5.2: There are three types of problems that may be asked from this section: 1) be able to use the Riemann sum definition of integrals with formulas 4 - 6 p. 383 given to evaluate an integral (problems 21 - 25), 2) evaluate integrals by interpreting them in terms of areas (geometric ones like circles, rectangles or triangles - problems 33, 34, 35, 36, 37, 38, 39, 40) and 3) apply the properties of definite integrals like in problems 47, 48, 49.

8. For Section 5.3: Be able to apply both parts of the Fundamental Theorem of Calculus: Part 1 as in problems 7, 8, 9, 11, 12, 13, 14, 15, 16 and Part 2 as in problems 19 - 42.

9. For Section 5.4: Be comfortable evaluating indefinite integrals (problems 5 - 14) and finding the displacement and distance traveled given a velocity function (problems 53, 54).

10. For Section 5.5: Be comfortable with the substitution rule. Keep in mind that an integral requiring the substitution rule can either be definite or indefinite and will likely not be labeled in any way to indicate that you must/should use a substitution to evaluate the integral (problems 7 - 43 odd, 49 - 67 odd).

11. For Section 6.1: For area between curves, you may be asked to make a sketch of the region. You should be able to also set-up and possibly evaluate the integral(s) needed to find the area between two curves. See problems( 1 - 4, 5, 7, 13, 16, 17)

12. for Section 6.2: Given the formula $V = \int_a^b A(x) \, dx$ or $V = \int_c^d A(y) \, dy$ be able to set-up and possibly evaluate the integral(s) needed to find the volume of a solid obtained by rotating a region about a given line. You may also need to sketch the region you are rotating. (problems 1, 2, 3, 5, 9, 11, 12, 16)

13. For Section 6.4: Given the formula $W = \int_a^b f(x) \, dx$, be able to set-up and possibly evaluate the integral(s) needed to determine the work done when stretching a spring (problems 7, 8) or work done in lifting a cable (problems 13, 14, 15)

14. For Section 6.5: Be able to determine the average value of a function and find $c$ such that $f(c) = f_{\text{ave}}$. (problems 9, 10, 11, 12 parts a and b only).
• Chap 5 TF Answers: T, F, T, F, F, T

• For some, integration takes more time than differentiation ... take extra time to be comfortable with the 17 Basic Skills questions I may ask and make sure you can set-up all the applications of integration from Chapter 6!

• Note that while Chapter 8 sections are not tested on Exam 5, they will be tested on the Final!