Math 120 Spring 98

Quiz 5

Name: _____

Date: _____

Time Begun: _____

Time Ended: _____

Topic covered: Integration by Substitution or Parts

The point of this quiz is to give you more practice with using the methods of integration by substitution and integration by parts to evaluate integrals.

Instructions:

1. Once you open the quiz, you have 60 minutes to complete it.

2. You may use the book or any of your class notes, and you may use a calculator. You must work alone.

3. If you use your own paper, please staple it to the quiz before coming to class. If you don't have a stapler, buy one.

4. After completing the quiz, sign the pledge below stating on your honor that you have adhered to these rules.

5. Relax and enjoy...

6. **This quiz is due on Monday, March 9**, in class. NO LATE QUIZZES WILL BE ACCEPTED.

Pledge: I, _____, pledge my honor as a human being and Occidental student, that I have followed all the rules above to the letter and in spirit.

Two students are discussing different approaches to evaluating a particular integral, $I = \displaystyle\int_1^2 e^{\sqrt{x}} dx$

Devon: Clearly there is no way to evaluate this integral.

Lee: But this is a definite integral, so we must be able to apply the Fundamental Theorem of Calculus to obtain a value for it (it's just a number).

Devon: Hmmm, well now that you mention that it's a definite integral I remembered that we can estimate any definite integral using Riemann sums like Simpson's Rule.

Lee: Why bother? We can use integration by substitution and let $u = \sqrt{x}$, therefore $du = \frac{dx}{2\sqrt{x}}$ and we can rewrite the given integral as $\displaystyle\int_1^{\sqrt{2}} 2u e^u \, du$ and then integrate by parts and get an approximate answer.

Devon: Well, you have to do all that work to get an approximate answer and I can just plug some symbols into a `TruBasic` program and also get an estimate, so I think my way is better!

[1.] (*10 points*) Write a couple of paragraphs discussing the students' understanding of Calculus. Identify **any** and all correct or incorrect statements made by the students. If a statement is incorrect explain why. **You must be careful not to make any incorrect statements yourself in your explanation.** PROOFREAD YOUR ANSWER.