

Quiz 5

DUE: WED. MAR. 5

Name: _____

Date: _____

Time Begun: _____

Time Ended: _____

Monday March 3

Ron Buckmire

Topic covered: Integration by Substitution and Integral Exchange

The point of this quiz is for you to illustrate your understanding of the Integration by Substitution technique as an anti-differentiation rule analogous to the differentiation rule known as the Chain Rule. Thus one is able to exchange one complicated integral for a simpler integral by taking advantage of the chain rule.

Reality Check:

EXPECTED SCORE : _____/10

ACTUAL SCORE : _____/10

Instructions:

1. Once you open the quiz, you have 30 minutes to complete it. Before you open the quiz you should check Blackboard.oxy.edu for any hints.
2. You **may not** use the book or any of your class notes, but you may use a calculator. You must work alone.
3. If you use extra 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. Complete the reality check to give yourself a sense of how well you think you did on the quiz.
5. Relax and enjoy....
6. **This quiz is due on Wednesday, March 5**, at the beginning of 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.

SHOW ALL YOUR WORK

(a) (4 points) Evaluate the integral $A = \int_1^5 \frac{1}{\sqrt{u}} du$

(b) (6 points) Show that your answer in (a) can be used to evaluate the integral $B = \int_0^2 \frac{x}{\sqrt{x^2 + 1}} dx$.
In other words show how one integral A can be transformed into the other integral B via a substitution $u(x)$, and write down an equation for how A and B are related.