Math 212 Spring 2006

BONUS Quiz 9   Multivariable Calculus

Name: ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

Date: ⎯⎯⎯⎯⎯⎯⎯⎯⎯   **Wednesday April 12**

Time Begun: ⎯⎯⎯⎯⎯⎯⎯⎯⎯   Ron Buckmire

Time Ended: ⎯⎯⎯⎯⎯⎯⎯⎯⎯

Topic : Changing Order of Integration of a Triple Integral

The idea behind this quiz is to provide you with an opportunity to illustrate your ability to evaluate a multiple integral in every possible order.

Reality Check:

EXPECTED SCORE : ⎯⎯⎯⎯⎯/**10**   ACTUAL SCORE : ⎯⎯⎯⎯⎯/**10**

Instructions:

0. Please look for a hint on this quiz posted to `faculty.oxy.edu/ron/math/212/06/`.

1. Once you open the quiz, you have as much time as you like to complete it, please record your start time and end time at the top of this sheet.

2. You may use the book or any of your class notes. 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. **Quizzes with loose sheets will not be graded.**

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

5. Your solutions must have enough details such that an impartial observer can read your work and determine HOW you came up with your solution.

6. Relax and enjoy...

7. **This quiz is due on Monday April 17**, in class. NO LATE QUIZZES WILL BE AC-CEPTED.

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.

1. Consider the iterated integral for $V = \int_{-1}^{1} \int_{y^2}^{1} \int_{0}^{1-x} dz\ dx\ dy$

(a) Write down the 5 other possible iterated integrals which represent the exact same value V (**HINT: Sketch 2-D slices of the volume that is being integrated; first holding** x **constant, then** y **constant, and then** z **constant. This will help you decide on the limits of integration.**)

(b) Evaluate any of your equivalent iterated integrals to obtain V.