

Quiz 9

MULTIVARIABLE CALCULUS

Name: _____

Assigned: **Friday April 3**

Time Begun: _____

Due: **Monday April 6**

Time Ended: _____

Prof. Ron Buckmire

Topic : Double and Triple Integrals

The idea behind this quiz is to provide you with an opportunity to demonstrate your understanding of evaluating iterated integrals.

Reality Check:

EXPECTED SCORE : _____/10

ACTUAL SCORE : _____/10

Instructions:

1. Once you open the quiz, you have **30 minutes** to complete, 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 UNSTAPLED 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 at the beginning of class on Monday April 6.**
NO LATE OR UNSTAPLED QUIZZES WILL BE ACCEPTED FOR GRADING.

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. (5 points) Evaluate $\int_0^4 \int_{\sqrt{x}}^2 \sin(y^3) dy dx$. (**HINT: there does not exist any explicit function $F(y)$ whose derivative $F'(y)$ equals $\sin(y^3)$ but this integral is calculable after applying Fubini's Theorem.**)

2. (5 points) Show that the volume of the tetrahedron bounded by the planes $y = 0$, $z = 0$, $x = 0$ and $y - x + z = 1$ is $1/6$ by writing down and evaluating an appropriate iterated integral. (**HINT: Draw a picture indicating where the tetrahedron crosses the x , y and z -axes.**)