Math 212 Fall 2005

BONUS Quiz **7** **Multivariable Calculus**

Name: _____

Date: _____ **Monday November 21**
Time Begun: _____ Ron Buckmire
Time Ended: _____

Topic : Multiple Integration

The idea behind this quiz is to provide you with an extra opportunity to illustrate your ability to evaluate double and triple integrals.

Reality Check:

EXPECTED SCORE : _____**/10** ACTUAL SCORE : _____**/10**

Instructions:

0. Please look for a hint on this quiz posted to `http://faculty.oxy.edu/ron/math/212/05/`
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.
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 November 28, 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.

Math 212 Fall 2005 **SHOW ALL YOUR WORK** **BONUS** Quiz 7

1. (*5 points.*) Evaluate $\iiint_S \frac{dx\ dy\ dz}{(x^2+y^2+z^2)^{3/2}}$ where S is the solid bounded by the spheres $x^2+y^2+z^2=a^2$ and $x^2+y^2+z^2=b^2$ and $a>b>0$.

2. (*5 points.*) Write down a multiple integral which can be used to compute the volume $V=\frac{1}{6}a^2h$ of a pyramid with height h and a right isosceles triangular base where the equal sides are of length a (where $h >> a > 0$). The location of the apex of the pyramid is above the right angle. (**HINT: think of this as the volume under a plane which intersects the x and y axis at a and the z-axis at h.**)