Calculus III | Assignment #3 | Date: 12/05/05
Fall 2005 | Dr. D. P. Story

Instructions. Okay, let's try *one more time*. **Use your own paper—clean, lined notebook paper**. Do not use this paper, neither front nor back. Use a pencil—not a pen—to write the solutions. Solutions should be well-written; I should not have the impression that it took you 2 minutes to write the solutions. Don't ~~scratch~~ scratch out your work; erase neatly, or re-write the page.

I would like to get an idea of *your* abilities, so please, do the problems yourself.

Show all details, it may even occur to you to draw a picture of the described regions.

1. Consider the integral $\iiint_E f(x, y, z)\, dV$, where E is the solid bounded by the planes $x = 0$, $z = 0$, $y = x$, and $6x + 2y + 3z = 6$.
   (a) Set up the integral in the order $dV = dz\, dy\, dx$.
   (b) Set up the integral in the order $dV = dy\, dx\, dz$.
   (c) Set up the integral in the order $dV = dx\, dy\, dz$.
2. Consider the integral $\iint_R x - y\, dA_{xy}$, where the region R is the region bounded by the four lines $x + 2y = 0$, $x + 2y = 2$, $x - y = 0$, and $x - y = 3$. Evaluate the integral by using the transformation $u = x + 2y$, $v = x - y$ to change the variables of integration.