Math 2270 Quiz 4

Name ________________________________

Points will be deducted for untidy or disorganized answers

1. (3 points) Calculate the iterated integral.

\[ \int_0^1 \int_0^{y^2} \int_0^y dz \, dx \, dy \]

2. (3 points) The volume of a the tetrahedron bounded by the coordinate planes and the plane \( x + 2y + 3z = 6 \) is given by the triple integral

\[ \int_A^B \int_C^D \int_E^F dz \, dy \, dx. \]

Find the values of the limits of integration \( A, B, C, D, E, \) and \( F \) (note that these may be functions of \( x, y, \) or \( z \)). Do not evaluate the integral!

3. (4 points) Find the values of the limits of integration \( A, B, C, D, E, \) and \( F \) so that

\[ \int_0^1 \int_{-1}^0 \int_0^{y^2} dz \, dy \, dx = \int_A^B \int_C^D \int_E^F dx \, dy \, dz. \]