Quiz 15.1 - 15.4 _____ Name: _____

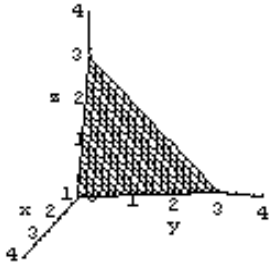
4 pts. per problem #1 - 4. 18 pts. Per.: _____

No calculators.

1) Evaluate the integral $\int_0^{\sqrt{\pi}} \int_{\pi/6}^{y^2} 2y \cos x \, dxdy$.

2) Evaluate $\int_0^4 \int_{y/2}^{\sqrt{y}} (x^2 + 4y) \, dxdy$ after switching the order of integration.

3) Use a *double integral* to find the volume of the solid bounded by the plane $3x + y + z = 3$ in the first octant.



4) Evaluate $\int_0^1 \int_0^{\sqrt{1-x^2}} e^{-(x^2+y^2)} \, dydx$ using polar coordinates. Sketch *R*.

5) True or False? If ρ is a continuous density function on the lamina corresponding to a plane region *R*, then the mass *m* of the lamina is given by $m = \iint_R \rho(x, y) \, dA$. _____(2 pts.)