Quiz 12
December 27th, 2012

1. (5 Points) The figure shows the region of integration for the integral

\[ \int_0^1 \int_{\sqrt{x}}^1 \int_{1-y}^{1-y} f(x, y, z) \, dz \, dy \, dx. \]

Rewrite the integral as an equivalent iterated integral in the five other orders.

2. (5 Points) Evaluate \( \iiint_E (x^3 + xy^2) \, dV \) where \( E \) is the solid in the first octant that lies beneath the paraboloid \( z = 1 - x^2 - y^2 \).