Name _____

Homework 16
Section 16.3

1. (6) Write a triple integral, in Cartesian coordinates, including limits of integration that gives the volume under the sphere $x^2 + y^2 + z^2 = 9$ and above the region between $y = x$ and $y = 2x - 2$ in the xy-plane, in the first quadrant.

2. (7) Solve for k given that $\int_0^1 \int_x^{k+1} \int_k^{y+x} 6x \; dzdydx = -\frac{1}{4}$.

3. (7) Find the mass of a triangular-shaped solid bounded by the planes $z = 1+x$, $z = 1-x$, $z = 0$, and with $0 \leq y \leq 3$. The density is given by $\delta = 10 - z$ gm/cm^3, and x, y, z are in cm.