Math 250 Triple Integral Practice

Triple Integrals

1. Describe or sketch the region of integration. If the limits do not make sense, say why.

   (a) $\displaystyle\int_0^6 \int_0^{3-x/2} \int_0^{6-x-2y} f(x,y,z)\ \ dz\ \ dy\ \ dx$

   (b) $\displaystyle\int_1^3 \int_1^{x+y} \int_0^{y} f(x,y,z)\ \ dz\ \ dx\ \ dy$

   (c) * $\displaystyle\int_{-1}^1 \int_0^{\sqrt{1-x^2}} \int_0^{\sqrt{2-x^2-y^2}} f(x,y,z)\ \ dz\ \ dy\ \ dx$

2. Find the volume of the pyramid with base in the plane $z = -6$ and sides formed by the three planes $y = 0$, $y - x = 4$, and $2x + y + z = 4$.