Name _____

Homework 16
Section 16.2

1. (2ea) Sketch the region of integration of the following.

(a) $\displaystyle\int_0^5 \int_{-1}^{x+2} \left(x^2 + y^2\right)\, dy\, dx$

(b) $\displaystyle\int_{-\sqrt{2}}^{\sqrt{2}} \int_0^{\sqrt{4-y^2}} \sin(xy)\, dx\, dy$

2. (5) Evaluate the integral $\displaystyle\int_1^2 \int_{1-x}^{\sqrt{x}} x^2 y\, dy\, dx$

3. (5) Set up an integral for the volume of the region which is above the plane $z = 2$ and below the graph of $f(x, y) = 27 - (x^2 + y^2)^2$.

4. (6) Evaluate the integral $\int_0^1 \int_{2x}^2 4e^{y^2}\, dy\, dx$.