

Name _____

Homework 15
Section 16.2

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

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

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

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

3. (5) Set up an integral for the volume of the region which is above the plane $z = 3$ and below the graph of $f(x, y) = 20 - x^2 - y^2$.

4. (6) Evaluate the integral $\int_0^1 \int_{2x}^2 4e^{y^2} dy dx$ by reversing the order of integration.