

Due on April 17, 2006, Monday, Class time. No late submissions!

### MATH 114 Homework 7

**1:** Sketch the region of integration, reverse the order of integration and then evaluate the integral

$$\int_0^1 \int_{1-y}^{\sqrt{1-y}} dx dy.$$

**2:** Sketch the region of integration, reverse the order of integration and then evaluate the integral

$$\int_0^4 \int_{-\sqrt{y}}^{\sqrt{y}} dx dy + \int_4^8 \int_{-\sqrt{8-y}}^{\sqrt{8-y}} dx dy.$$

**3:** Evaluate the integral

$$\int_0^2 \int_0^{4-x^2} \frac{xe^{2y}}{4-y} dy dx.$$

**4:** Find the volume of the solid in the first octant bounded by the coordinate planes, the cylinder  $x^2 + y^2 = 25$  and the plane  $x + z = 7$ .

**5:** Evaluate the integral

$$\int_0^1 \int_1^2 \frac{dx dy}{x+y} + \int_1^4 \int_{\sqrt{y}}^2 \frac{dx dy}{x+y}.$$