

College of the Holy Cross, Spring Semester, 2021
Math 241 (Professor Hwang)
Worksheet 3, Due April 16

In Questions 1 and 2, (a) sketch the region of integration, (b) compute the integral, (c) change the order of integration, and (d) evaluate the new integral.

Exercise 1. $\int_0^2 \int_0^{x^2} (x^2 + xy + 2y) dy dx$

Exercise 2. $\int_0^2 \int_{x^2}^4 (x^2 + xy + 2y) dy dx$

Exercise 3. Sketch the region of integration and change the order of integration. Evaluate the integral that can be evaluated.

$$\int_0^\pi \int_0^x \frac{\sin x}{x} dy dx$$

Exercise 4. Calculate the integral of $f(x, y) = 2x^2y$ over the region shown.

