

STAT 2857A – Lecture 19 Examples and Exercises

Example 19.1

Integrate $f(x, y) = xy$ over the domain $0 < x < 1, 0 < y < 1$.

Example 19.2

Integrate $f(x, y) = xy$ over the domain $x < y < 1, 0 < x < 1$.

Example 19.3

Integrate $f(x, y) = xy$ over the domain $0 < x < 1, 0 < x + y < 1$.

Example 19.4

Integrate $f(x, y) = (1 - x^2)(1 - y^2)$ over the domain $0 < x < 1, 0 < y < 1$.

Exercise 19.1

- a) Integrate $f(x, y) = e^{x+y} - 1$ over the region $0 < x < 1, 0 < y < 1$.
- b) Integrate $f(x, y) = e^{x+y} - 1$ over the region $y < x < 1, 0 < y < 1$.
- c) Integrate $f(x, y) = xy$ over the region $x^2 + y^2 < 1$.