

Lecture 25

March 30, 2015

1. Consider

$$f(x, y) = \frac{3}{2}(x^2 + y^2)$$

when $0 \leq x \leq 1$ and $0 \leq y \leq 1$ and $f(x, y) = 0$ otherwise.

- (a) Find $\text{Cov}(X, Y)$.
 - (b) Find $\text{Corr}(X, Y)$.
2. Try 5.2.25. One way is to let $f(x, y) = K$ and use the fact that it is a uniform distribution to find K , then find $E(X.Y)$. Another way is to argue that since the two variables are independent, $E(X.Y) = E(X).E(Y)$.