Homework 2

1. Let . Find E(Y) and Var(Y)

Use integration by parts to come to the result of:

, where *a* and *b* are constants

)

1. Let the random variables X and Y have joint pdf Find , E(X), E(Y), E(XY), and Cov(X, Y).

1. with mean vector and variance matrix What is the distribution, mean, and variance of where

, because a linear combination of normal random variables is itself a normal random variable

1. Y is the same as above, but , let Find the mean, variance, and distribution of z.

Ay is a 2 x 1 normal random vector with:

Therefore, is distributed as a normal random vector, with and