

Name:

ECEn 370

Quiz 8

Friday, March 5, 2010.

1. Suppose that you walk to class at a speed which is uniformly distributed from 4 to 5 miles per hour (maybe because of snow, like today?). The distance of a single trip to class is 20 miles. What is the pdf of the duration of the trip?

2. Suppose you are given random variables X and Y which have their values determined by the the joint PMF given by the following points: $(1,0)$, $(0,1)$, $(-1,0)$, $(0,-1)$ each with probability $1/4$. Find the following: $\text{cov}(X, Y)$ and correlation coefficient, ρ . Are X and Y independent random variables?

3. Suppose you know that $\text{var}(X) = 2$, $\text{var}(Y) = 3$, $\text{cov}(X, Y) = 1$, and $Z = 2X - 3Y + 3$. Find $\text{var}(Z)$.