ECEn 370

Quiz 4

Friday, February 5, 2010.

You have the following joint PMF of random variables X and Y:

1. Find the marginal PMFs of X and Y, $p_X(x)$ and $p_Y(y)$.

2. Find the expectation and variance of X and Y, $\mathbf{E}[X]$ and $\mathbf{E}[Y]$, and $\mathrm{var}(X)$ and $\mathrm{var}(Y)$.

3. Find the conditional PMFs $p_{X|Y}(x|3)$ and $p_{Y|X}(y|3)$.

4. Compute $\mathbf{E}[Z]$, where $Z = 2X + 3Y + 10$.

5. Given the event $A = \{X = 2\}$, compute $\mathbf{E}[Z|A]$, where $Z = 2X + 3Y + 10$.