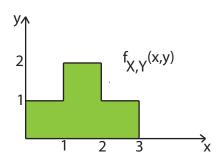
ECEn 370

Quiz 7

Friday, February 26, 2010.

The random variables X and Y have a joint distribution given by:



 $f_{X,Y}(x,y) = \begin{cases} c, & \text{if } (x,y) \text{ is in shaded region} \\ 0, & \text{otherwise} \end{cases}$

- 1. What is the value of c that makes this pdf legitimate?
- 2. What is the probability of the event $\{X \leq Y\}$?
- 3. What is the pdf associated with $f_{X|Y}\left(x|\frac{3}{2}\right)$?
- 4. What is the pdf associated with $f_{Y|X}\left(y|\frac{5}{2}\right)$?
- 5. Suppose you have the event $\{Y \geq 1\}$. What is the joint PDF associated with $f_{X,Y|A}(x,y)$?
- 6. Find E[X].
- 7. Find E[X|A].