EAS 595 PROB HW 2

DUE SUNDAY SEP 30, 11:59 P.M.

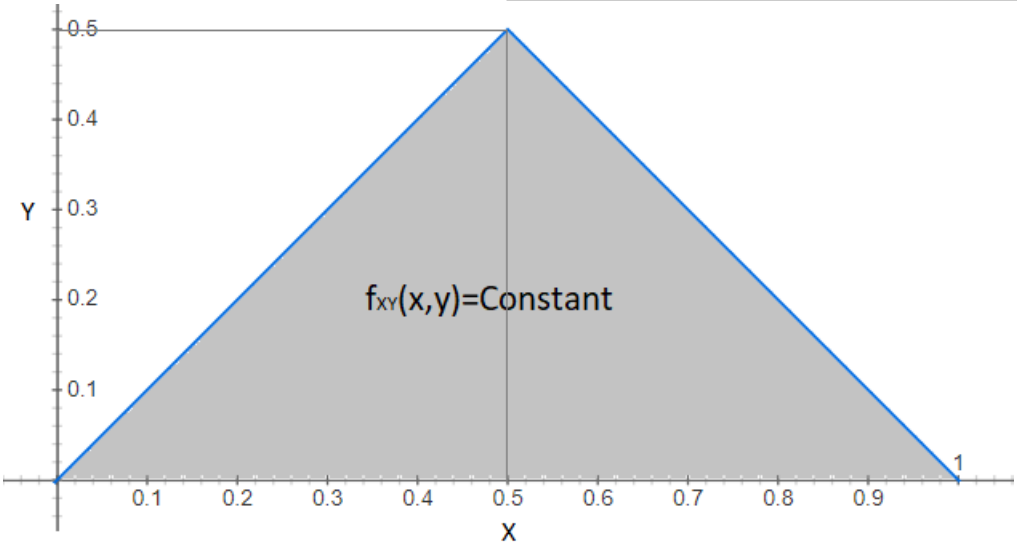
1. Book Problems [80]%

(1) Chapter 2 Problems 3, 18, 21, 36
(2) Chapter 3 Problems 8, 15, 23, 34

2. Other questions [20]%

(1) An under cover police is following a suspect. At each second, the suspect decides to stay at his current position with the probability of 'p' or move one unit forward/backward with the equal probability '(1-p)/2'. The police always moves one unit toward the suspect regardless of suspect's movement. Let's assume that the police is initially 'X' unit away from the suspect where X is a discrete random variable with PMF of $P_X(x)$.
What is the expected value of the time it takes the police to capture the suspect?

(2) Let X and Y be two random varibales with a uniform joint PDF defined over the shaded area shown in the following figure. Find the conditional PDF of X given Y.



Note that solutions to many HW problems in text are online at `http://www.athenasc.com/prob-solved_2ndedition.pdf`