SSIE 660: Applied Stochastic Processes

Homework assignment 3

Sep. 19th, 2016
Due: Sep. 26th, 2013, Before class starts

1. Solve Chapter 2. Problem 1.
2. Solve Chapter 2. Problem 9.
3. Solve Chapter 2. Problem 20.
4. Solve Chapter 2. Problem 33.
5. Solve Chapter 2. Problem 54.
6. Solve Chapter 2. Problem 76.
7. Given that X and Y are two independent random variables with the following joint probability distributions,

x	0	1	2	3	4
$p(X = x)$	$1/8$	$1/8$	$1/4$	$1/3$	$1/6$
y	1	2	3	4	5
$p(Y = y)$	$1/4$	$1/8$	$1/8$	$1/4$	$1/4$

   Find $P[X \leq Y + 1]$.

8. X and Y are two independent random variables with the following probability density functions.

$$f_X(x) = \begin{cases} 1/4, & 2 < x < 6 \\ 0, & \text{elsewhere} \end{cases}$$

$$f_Y(y) = \begin{cases} 1/6, & 1 < y < 7 \\ 0, & \text{elsewhere} \end{cases}$$

   Find $P[X \leq Y]$.