Stochastic Processes Fall 2021
Sharif University of Technology CE 695-1
Dr. H.R. Rabiee

Time: 20 mins

Name: Std. Number:

Prerequisite Quiz

Questions

1. X and Y are two independently distributed variables each having a uniform distribution on the interval [0,1]. Z being max[X,Y] and W, min[X,Y], what would E[Z-W] be?

2. Let X be a continuous random variable with PDF $f_X(x) = \begin{cases} x^2(2x + \frac{3}{2}) & 0 < x \leq 1 \\ 0 & otherwise \end{cases}$ if $Y = \frac{2}{X}+3$ find $E[Y]$ and $Var(Y)$

3. Let $X =\sim Uniform(\frac{-\pi}{2}, \pi)$ and $Y = \sin X$. find $f_Y(y)$.