ASSIGNMENT 4

March 16, 2004 (before 6:00 pm)

Homework 4: Generate random variates distributed according to the probability density function as given in HW2

This homework is a continuation and extension of homework 2. Re-do homework 2 if you did not get full credit for it.

1. Use the inverse function method to generate random variates distributed according to the probability density function as given in homework 2. First show in detail how the inverse function method can be used for this purpose. Derive some formulas which you will need.

2. Based on the formulas derived, write a program in any language you wish to generate those random numbers. Include a hard-copy of your program and a page or so of the numbers that you have generated.

3. Using a large number, N, of the random numbers that you have generated to compute the mean and variance. Compare your results with the theoretical results that you derive in homework 2. They should agree quite well especially for large N.