Exam I

You must send me the codes for all problems. For problem 2, you also need to write the answers besides the codes.

1. Generate a 10 by 10 matrix, such that the diagonal elements are from Gamma distribution with α=1 and β=2, and lower triangle elements are from Normal distribution with mean µ=-1 and variance . The upper triangle elements are from uniform distribution [0, 3].

For problem 1, you can use either R or SAS. It is your choice.

1. You can find a csv file in the blackboard assignment folder. There are two variables in the file, one is BMI (Body Mass Index), another one is FEMALE with 1 indicates female and 0 indicates male.
   1. Input the file into SAS format.
      1. Compute the mean, standard deviation, 5th, 25th, median, 75th, 95th quantile, as well as 95% confidence interval of the mean of BMI.
      2. Compute 90% confidence interval of the proportion of female.
   2. Input the file into R data format.
      1. Compute the mean, standard deviation, 5th, 25th, median, 75th, 95th quantile, as well as 95% confidence interval of the mean of BMI.
      2. Compute 90% confidence interval of the proportion of female.