STAT 445 Lab 3
ASSIGNMENT # 3
Due: Lab 4 (at the end)

**Question 1. (Show your R codes and results)**

**(a)** Generate a random sample of size 20 from normal distribution with mean 7 and variance 4. Round the values to 2 decimal places and call the vector $x_3$. Show this vector $x_3$.

**(b)** Add this vector to your R dataset created from 'assign1.dat'. There are now 4 variables: $y$, $x_1$, $x_2$ and $x_3$. Generate summary statistics for all these variables.

**(c)** Make a scatterplot of $y$ versus $x_3$ and add the simple linear regression line to the plot.

**(d)** Add a smooth curve relating $y$ to $x_3$ to this same plot.

**Question 2. (Show your R codes only)**

Write a 'single' R function with argument 'm' that will

(i) generate a random sample of size 50 from exponential distribution with rate 2 and calculate its mean.

(ii) repeat (i) 'm' times and create a vector of 'm' means.

(iii) produce a normal quantile plot of the means.