Assignment 1 Example

LAST NAME: STRUTHERS

FIRST NAME: CYNTHA

USERID: castruth

UWaterloo ID: 20456458

<u>Problem 1:</u> Fill in the information below based on your data set which was generated using your ID number as the seed for the random number generator.

The first five numbers in your Gaussian data set are:

-12.89	**-5.67**	**-2.60**	**-1.54**	**-0.31**

Sample mean = 8.114650

Sample standard deviation = 4.812293

The five number summary is:

-12.89	**5.36**	**7.815**	**11.320**	**20.770**

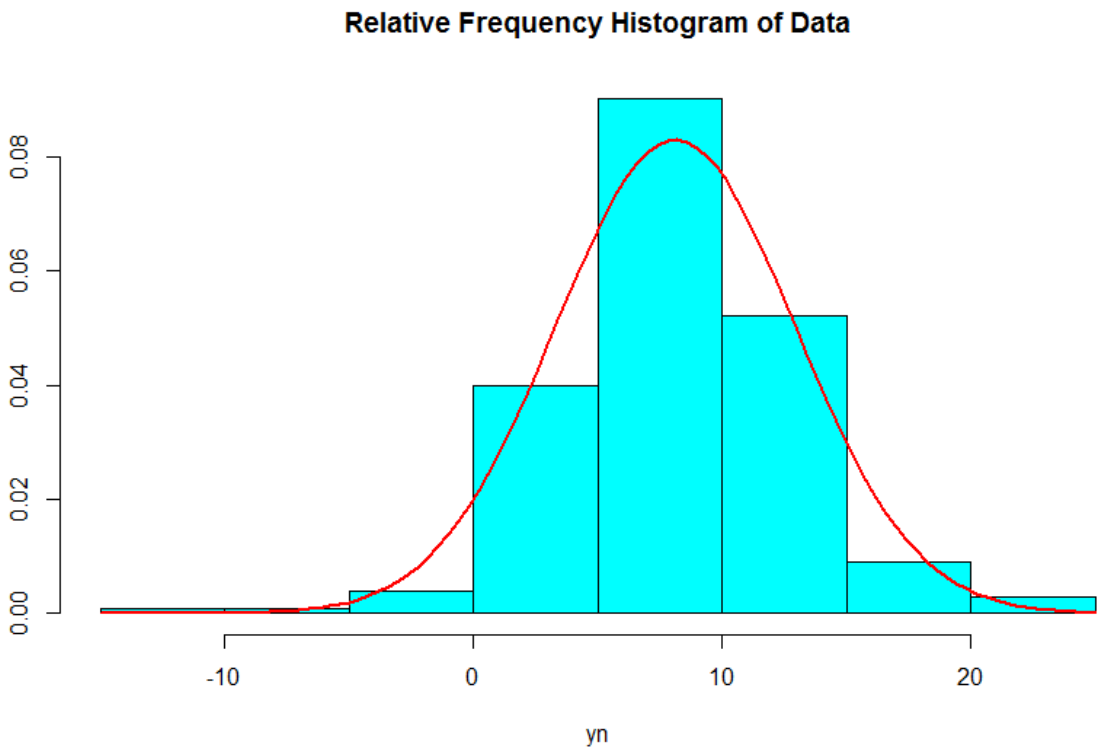
Sample median = 7.815

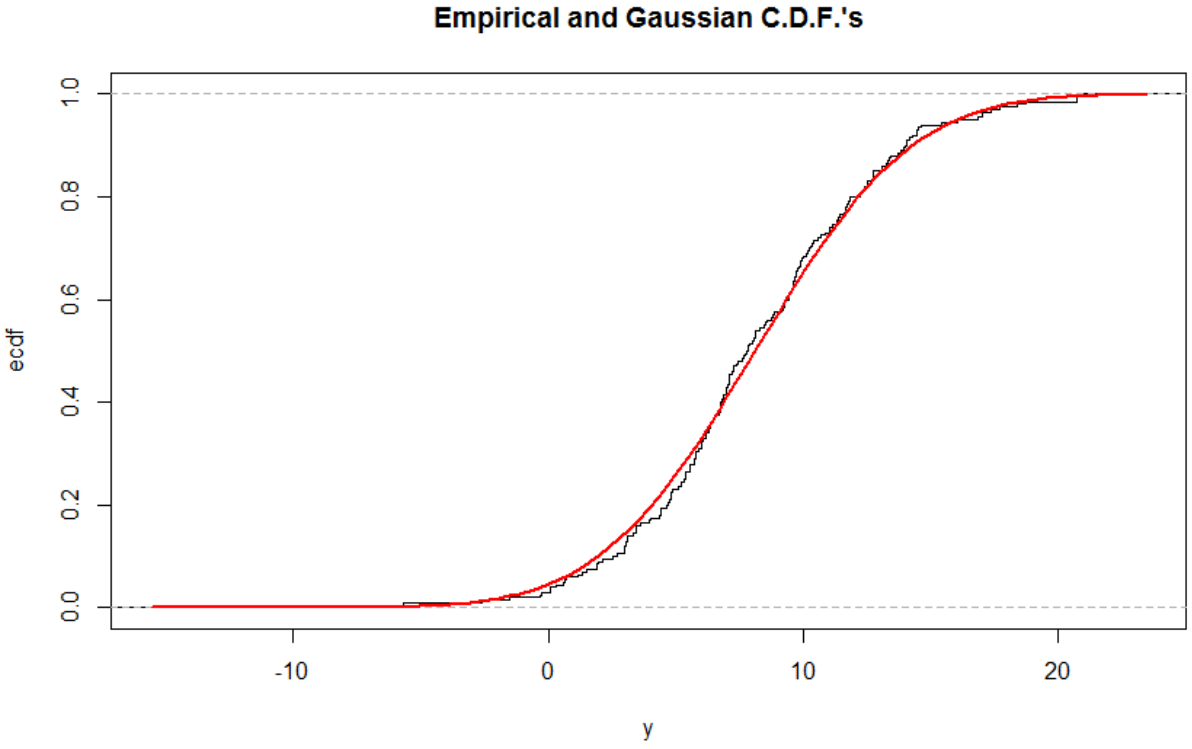
Range = 20.770 – (-12.89) = 33.66

IQR = 11.32 – 5.36 = 5.96

Sample skewness = -0.2029152

Sample kurtosis = 4.486426


Relative Frequency Histogram of Data
0.00
0.02
0.04
0.06
0.08
-10
0
10
20
yn


Empirical and Gaussian C.D.F.'s
ecdf
0.0
0.2
0.4
0.6
0.8
1.0
-10
0
10
20
y

<u>Problem 2:</u> The first five numbers in your Exponential data set are:

0.01	**0.13**	**0.18**	**0.24**	**0.26**

Sample mean = 7.916900

Sample standard deviation = 9.249768

The five number summary is:

0.010	**2.070**	**5.095**	**11.120**	**90.520**

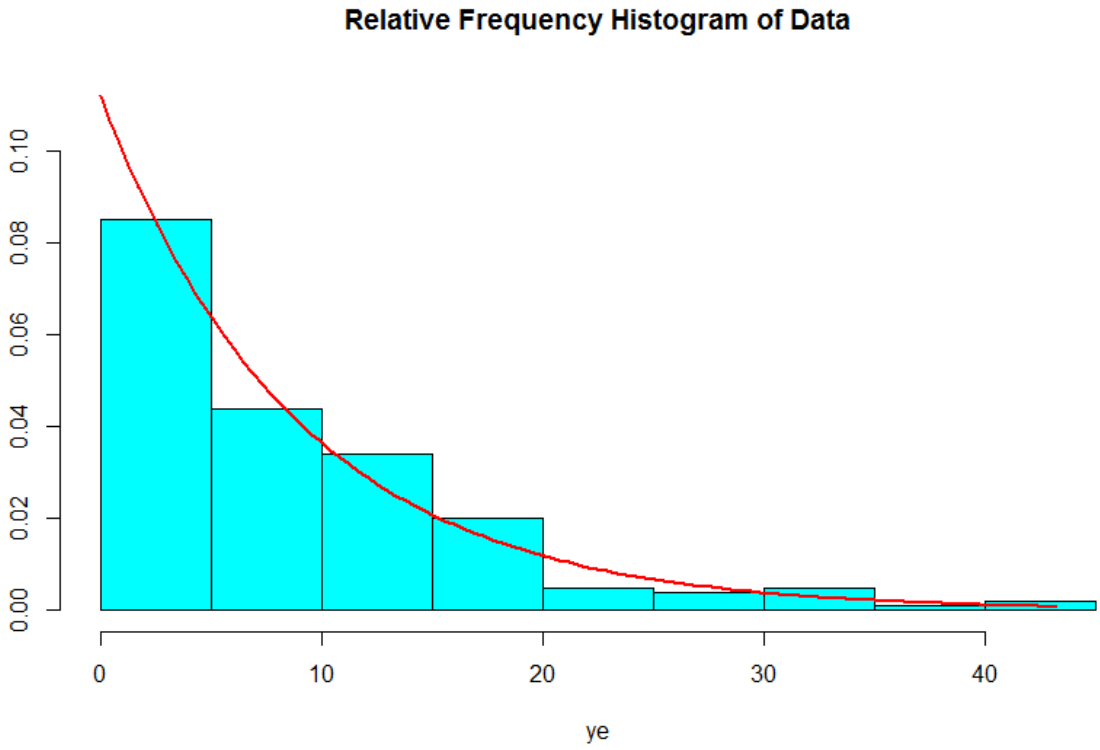
Sample median = 5.095

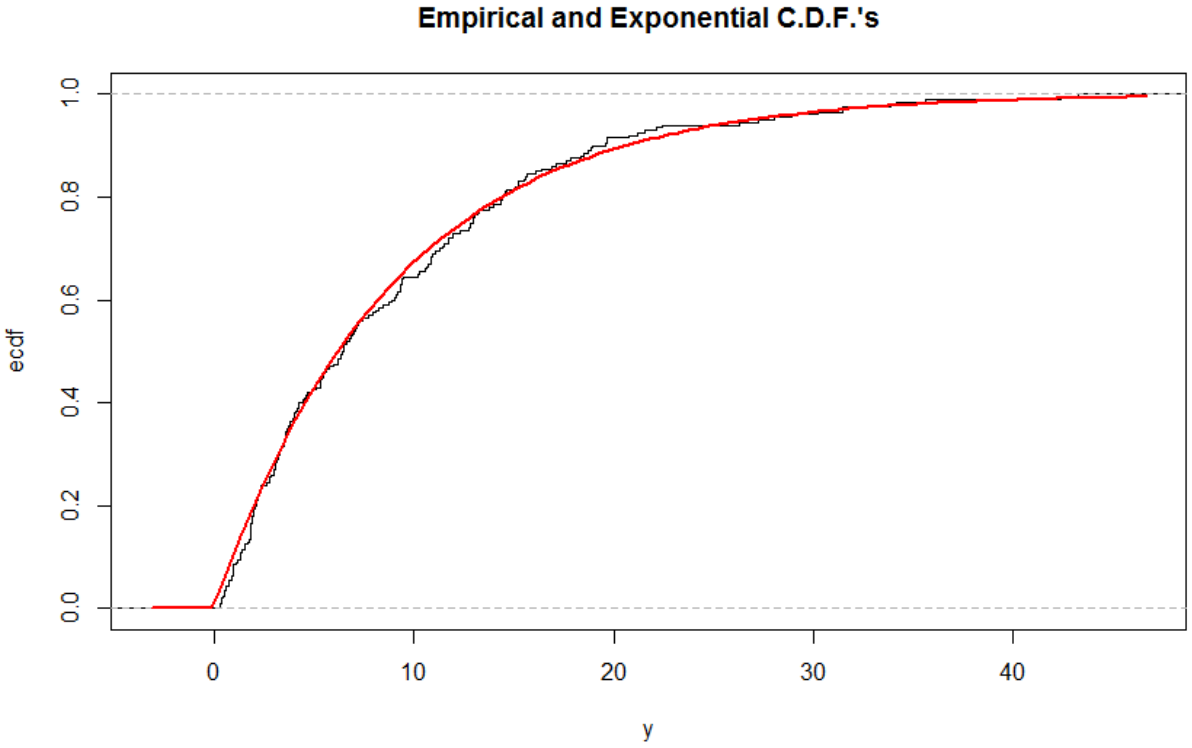
Range = 90.520 – 0.010 = 90.51

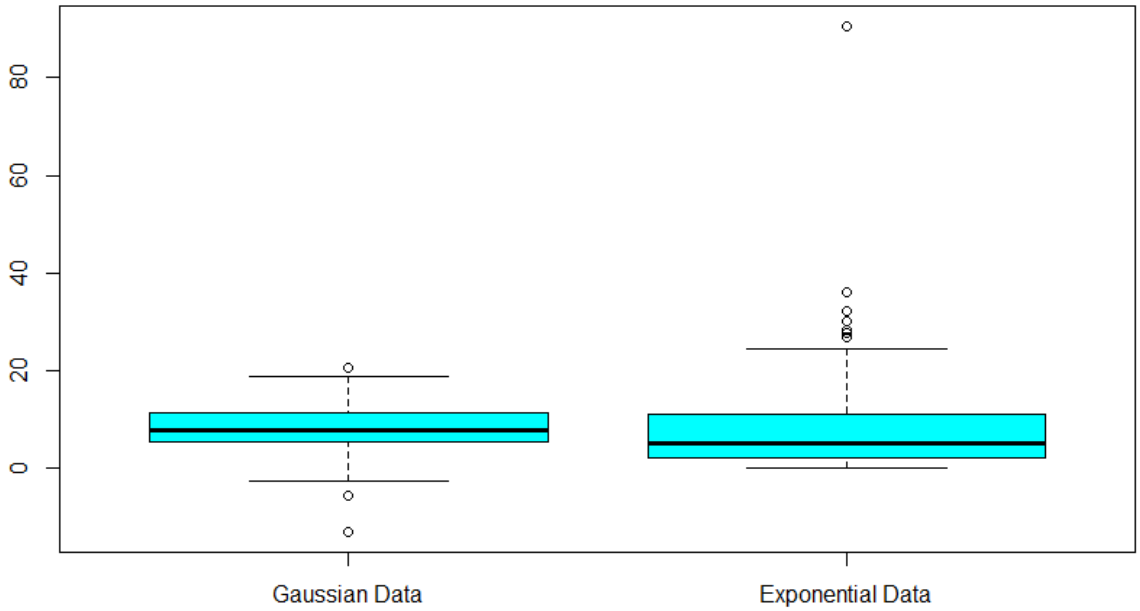
IQR = 11.120 – 2.070 = 9.05

Sample skewness = 4.198336

Sample kurtosis = 33.82573


Relative Frequency Histogram of Data
0.00
0.02
0.04
0.06
0.08
0.10
0
10
20
30
40
ye


Empirical and Exponential C.D.F.'s
ecdf
0.0
0.2
0.4
0.6
0.8
1.0
0
10
20
30
40
y


0
20
40
60
80
Gaussian Data
Exponential Data

<u>Problem 3:</u> The first five numbers in your Gamma data set are:

1.32	**2.27**	**3.62**	**4.18**	**4.66**

Sample mean = 22.89415

Sample standard deviation = 13.02463

The five number summary is:

1.320	**13.515**	**20.775**	**30.555**	**74.390**

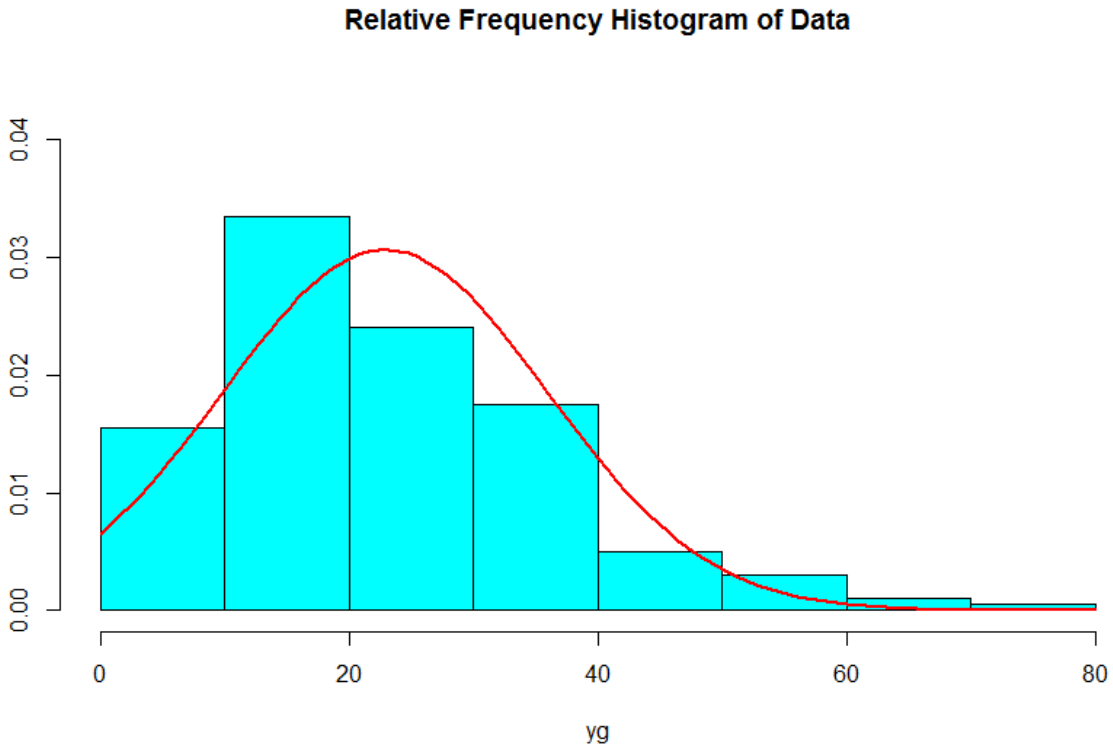
Sample median = 20.775

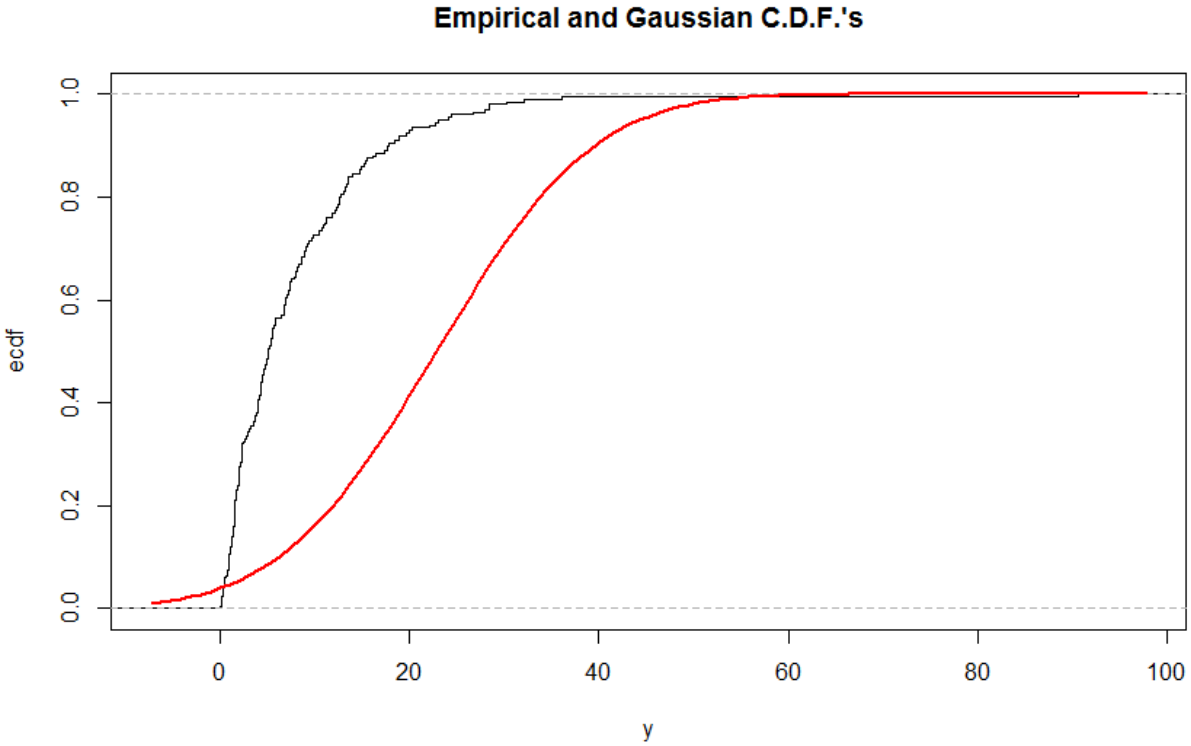
Range = 74.390 – 1.320 = 73.07

IQR = 30.555 – 13.515 = 17.04

Sample skewness = 0.9927479

Sample kurtosis = 4.116735


Relative Frequency Histogram of Data
0.00
0.01
0.02
0.03
0.04
0
20
40
60
80
yg


Empirical and Gaussian C.D.F.'s
ecdf
0.0
0.2
0.4
0.6
0.8
1.0
0
20
40
60
80
100
y

For Gaussian data we expect the mean and median to be ….

Problem 4:

Alpha = 8.11465 **Beta = 7.9169**

The first five pairs of numbers in your bivariate data set are:

x	y
1.1	24.1
1.9	14.9
8.5	64.1
15.5	136.9
19.6	156.0

Sample Correlation = 0.9365159