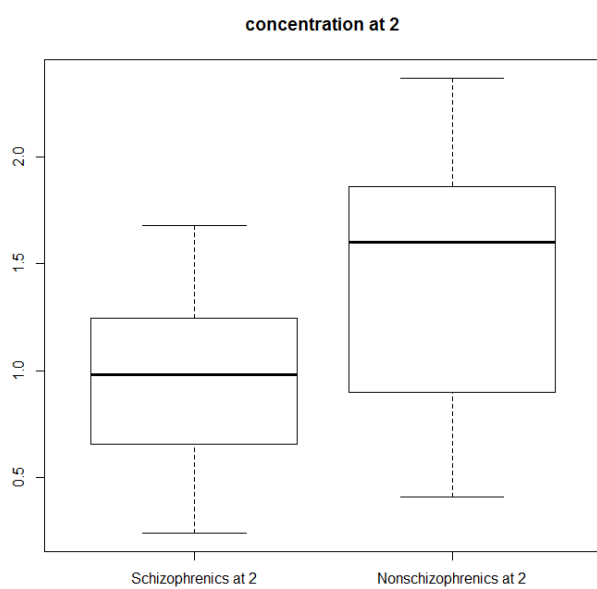
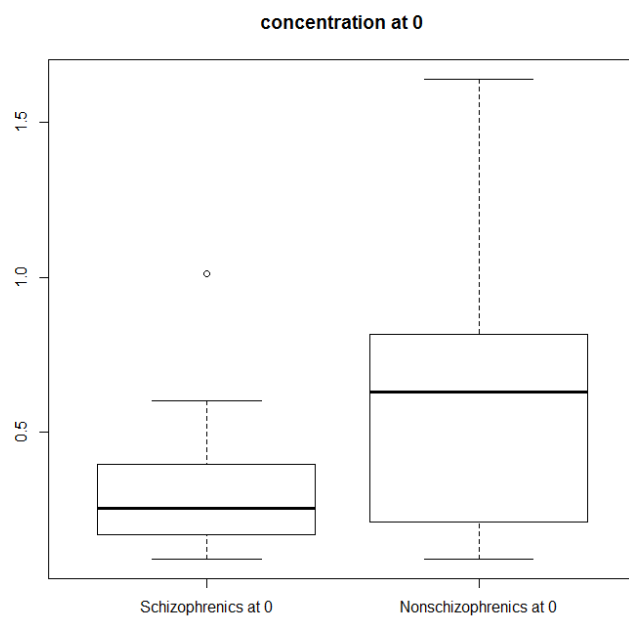


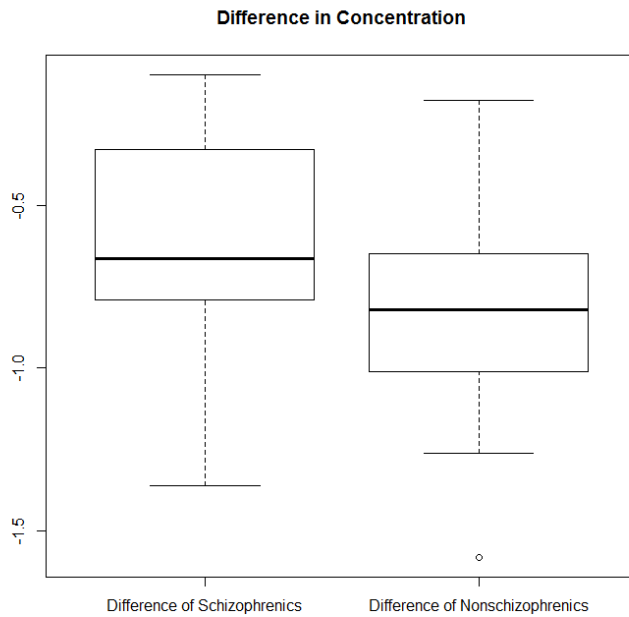
Wonjohn Choi

23123143

Homework 8 #44

a) Graphical comparison





b)

For 0, p-value = 0.03701

This is rejected for alpha of 0.5. Hence, evidence of difference is strong.

For 2, p-value = 0.01275

This is rejected for alpha of 0.5. Hence, evidence of difference is strong.

For difference, p-value = 0.07919

This is not rejected for alpha of 0.5. Hence, evidence of difference is not strong.

c)

For 0, p-value = 0.07439

This is not rejected for alpha of 0.5. Hence, evidence of difference is not strong.

For 2, p-value = 0.01298

This is rejected for alpha of 0.5. Hence, evidence of difference is strong.

For difference, p-value = 0.1059

This is not rejected for alpha of 0.5. Hence, evidence of difference is not strong.

d)

## Descriptive Statistics

For Schizophrenics Total,

# Min. 1st Qu. Median Mean 3rd Qu. Max.

# 0.00 0.10 6.30 35.78 32.40 359.30

For Nonschizophrenics Total,

# Min. 1st Qu. Median Mean 3rd Qu. Max.

# 0.0 22.7 101.9 123.0 117.9 620.4

For Schizophrenics mg/kg,

# Min. 1st Qu. Median Mean 3rd Qu. Max.

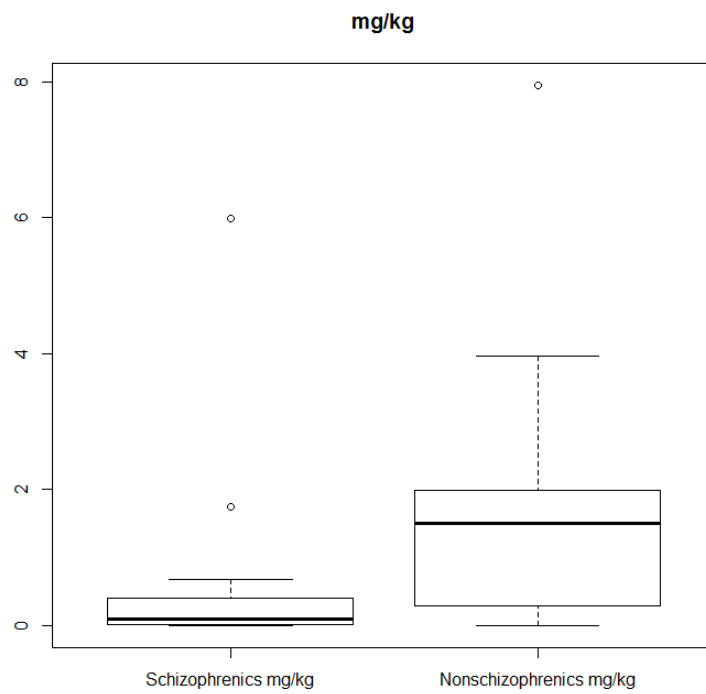
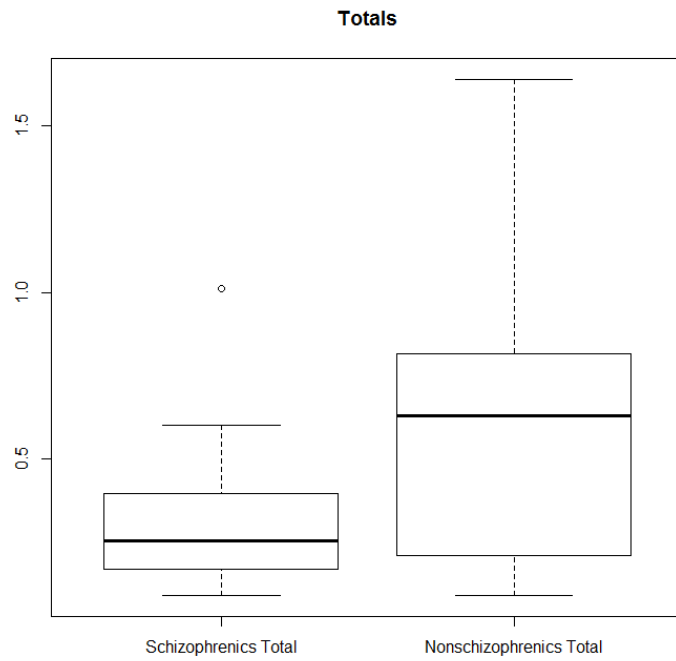
# 0.0000 0.0100 0.1000 0.5295 0.3975 5.9900

For Nonschizophrenics mg/kg,

# Min. 1st Qu. Median Mean 3rd Qu. Max.

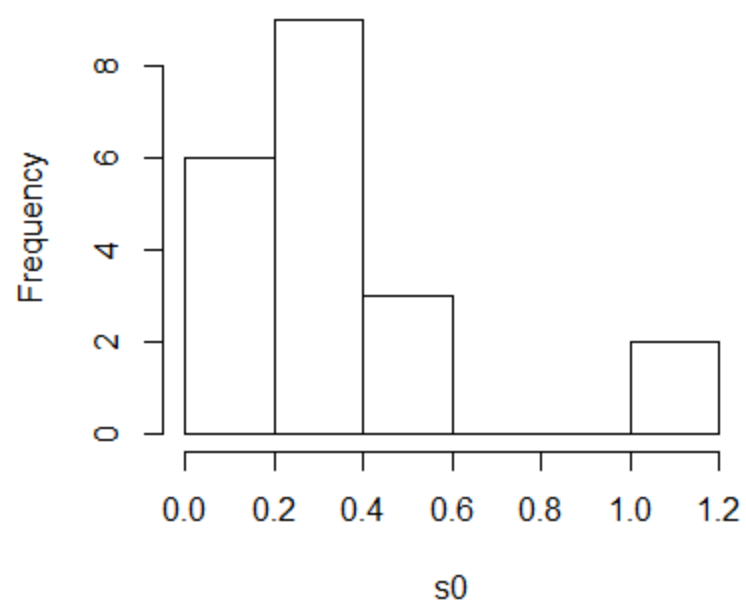
# 0.000 0.295 1.500 1.779 1.995 7.950

Graphical presentation

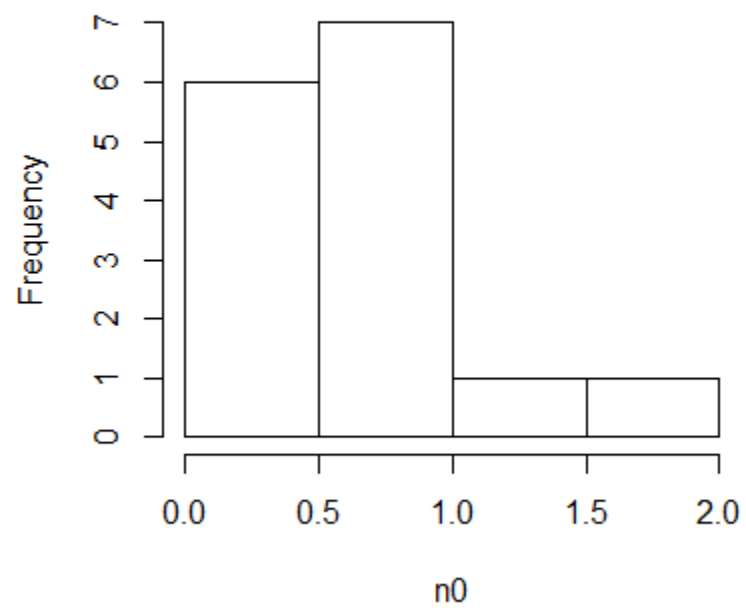


Histograms to see if data is normally distributed

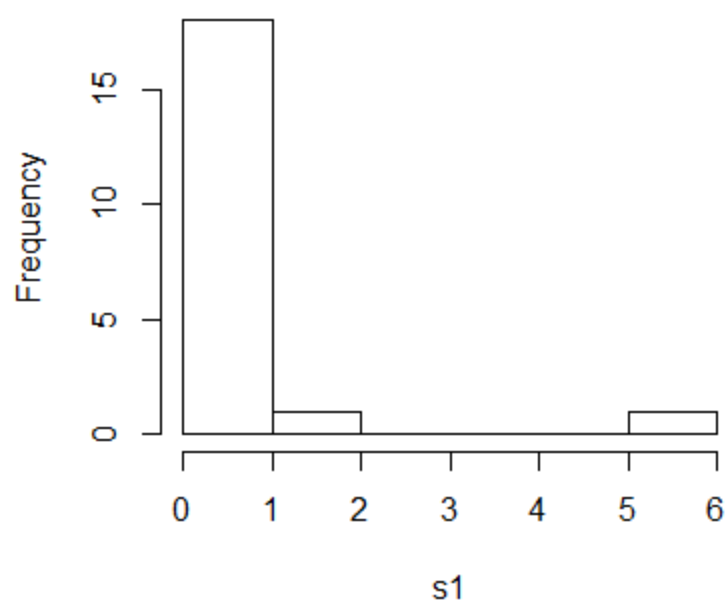
**Histogram of Schizophrenics Total**



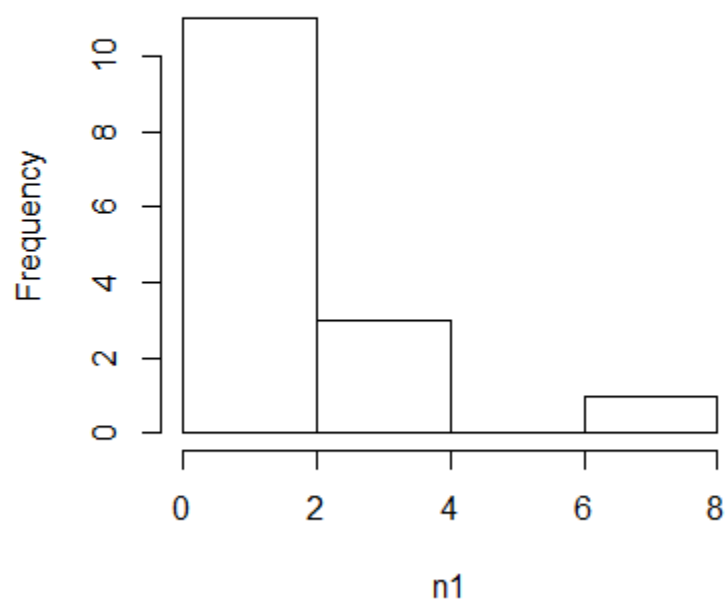
**Histogram of Nonschizophrenics Total**



**Histogram of Schizophrenics mg/kg**



**Histogram of Nonschizophrenics mg/kg**



Data does not look normally distributed.

e)

For total, p-value = 0.06694

This is not rejected for alpha of 0.05, so evidence of difference is not strong.

But normality assumption was not reasonable from d).

For mg/kg, p-value = 0.05487

This is not rejected for alpha of 0.05, so evidence of difference is not strong.

But normality assumption was not reasonable from d).

f)

For total, p-value = 0.01404

This is rejected for alpha of 0.05, so evidence of difference is strong.

For mg/kg, p-value = 0.01156

This is rejected for alpha of 0.05, so evidence of difference is strong.

The result is exactly opposite how it was in e).

g)

Descriptive statistics

Schizophrenics Plasma

# Min. 1st Qu. Median Mean 3rd Qu. Max.

# 0.5100 0.6950 0.7700 0.8907 1.1100 1.2800

Schizophrenics Urine

# Min. 1st Qu. Median Mean 3rd Qu. Max.

# 0.09 27.97 86.20 80.86 111.10 182.10

Control Plasma

# Min. 1st Qu. Median Mean 3rd Qu. Max.

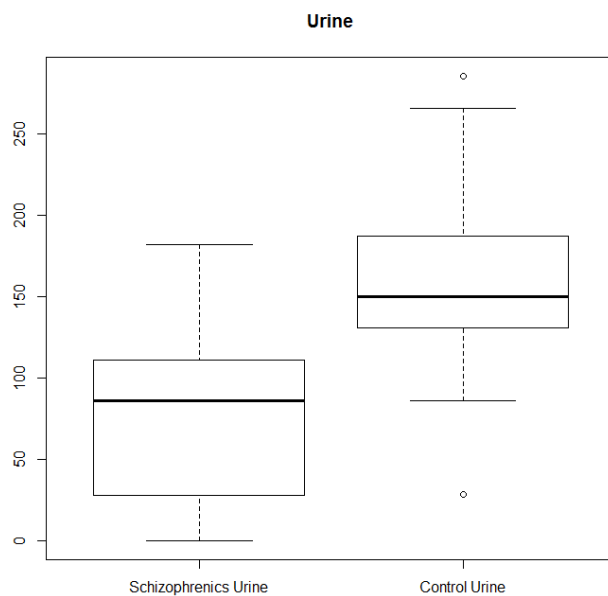
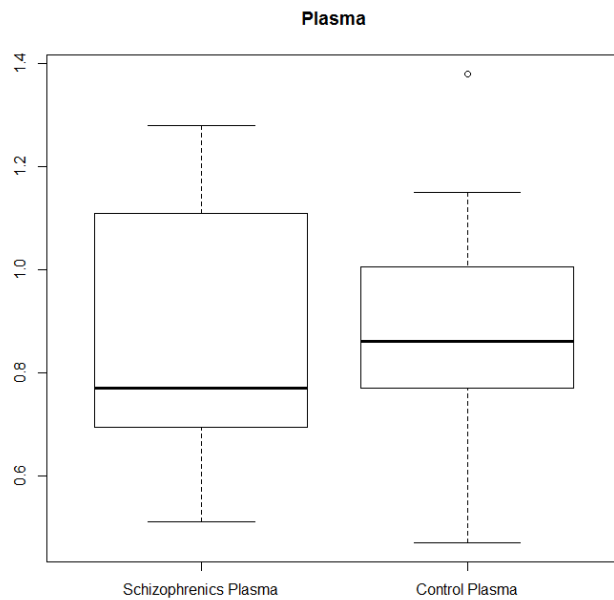
# 0.470 0.770 0.860 0.878 1.005 1.380

## Control Urine

# Min. 1st Qu. Median Mean 3rd Qu. Max.

# 28.26 130.50 149.80 160.30 187.30 285.30

## Graphical presentation





h)

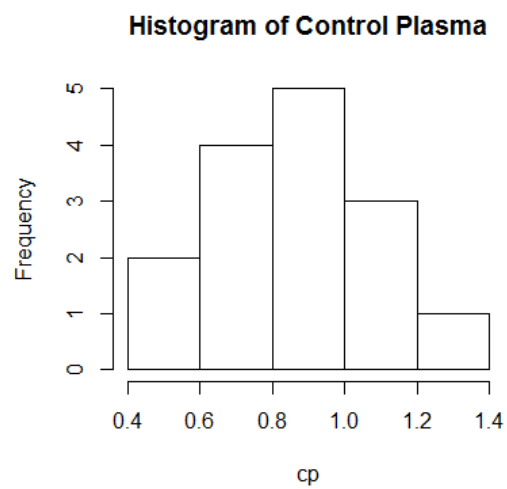
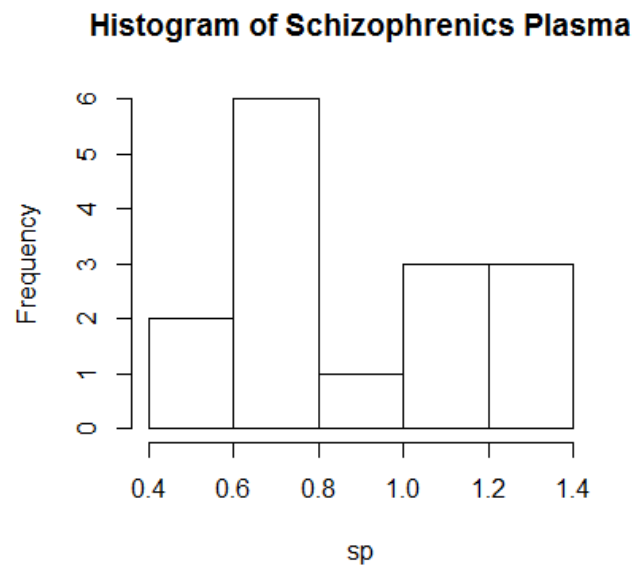
For plasma, p-value: 0.8899

This is not rejected for alpha of 0.05, so evidence of difference is weak.

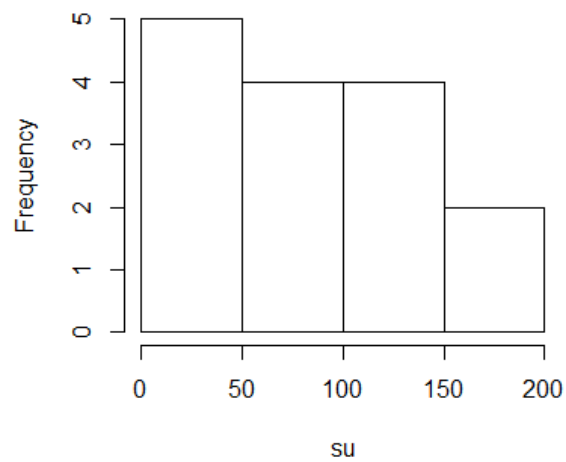
For urine, p-value: 0.001876

This is rejected for alpha of 0.05, so evidence of difference is strong.

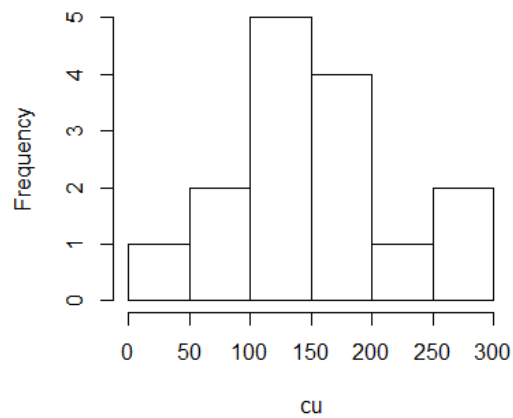
Histograms to see if data is normally distributed



**Histogram of Schizophrenics Urine**



**Histogram of Control Urine**



Schizophrenics is not normally distributed.

Control data is normally distributed.

Since both distributions must be normally distributed for normality assumption for t-test, it is not reasonable to assume so.

i)

For plasma, p-value=1

This is not rejected for alpha of 0.05, so evidence of difference is weak.

For urine,  $p\text{-value}=0.00323$

This is rejected for alpha of 0.05, so evidence of difference is strong.