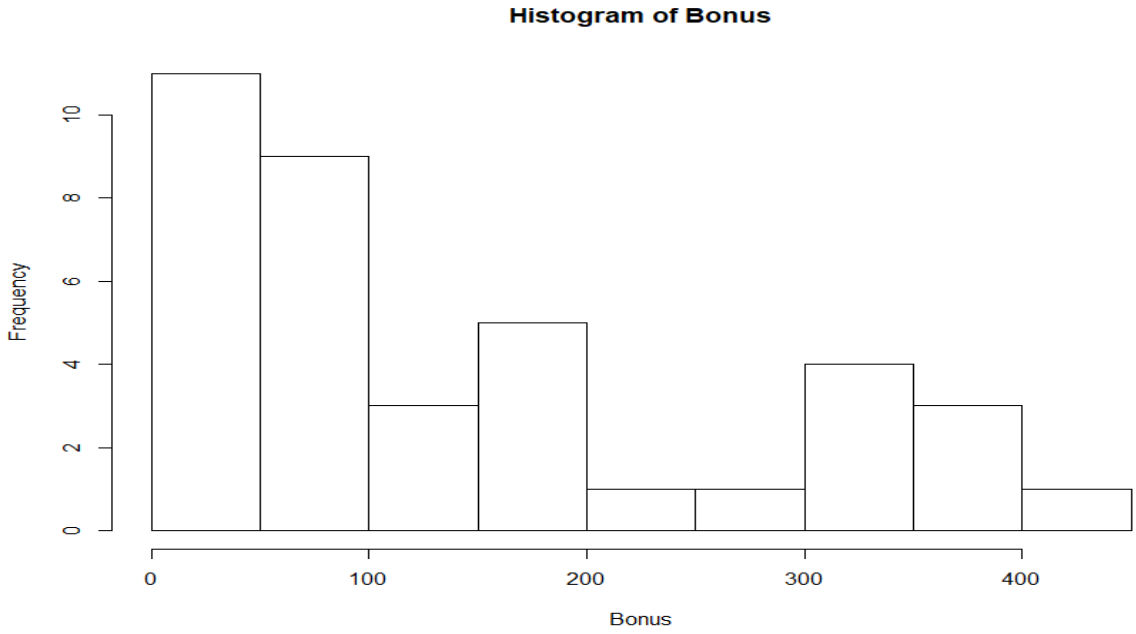
EDA on Bonus

It's a numeric variable with sample mean = 145.7053, sample variance = 17146.85

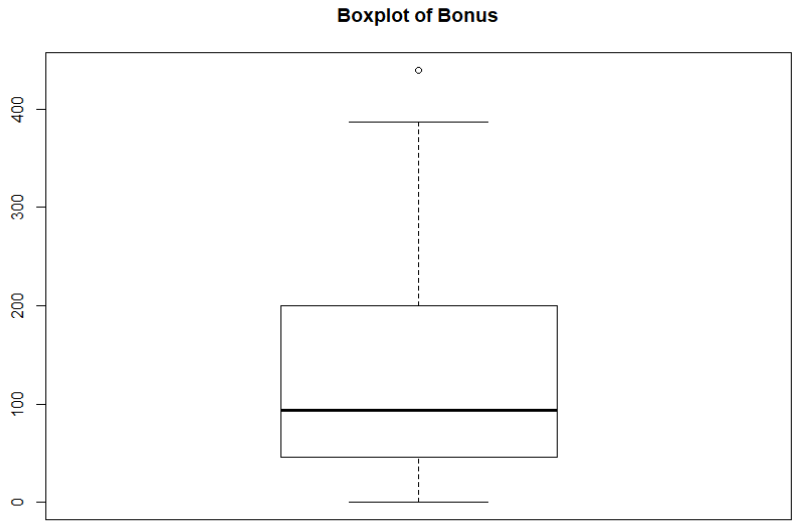
The histogram of Bonus is



Histogram shows that the distribution is not symmetric.

Five number summary of Bonus is

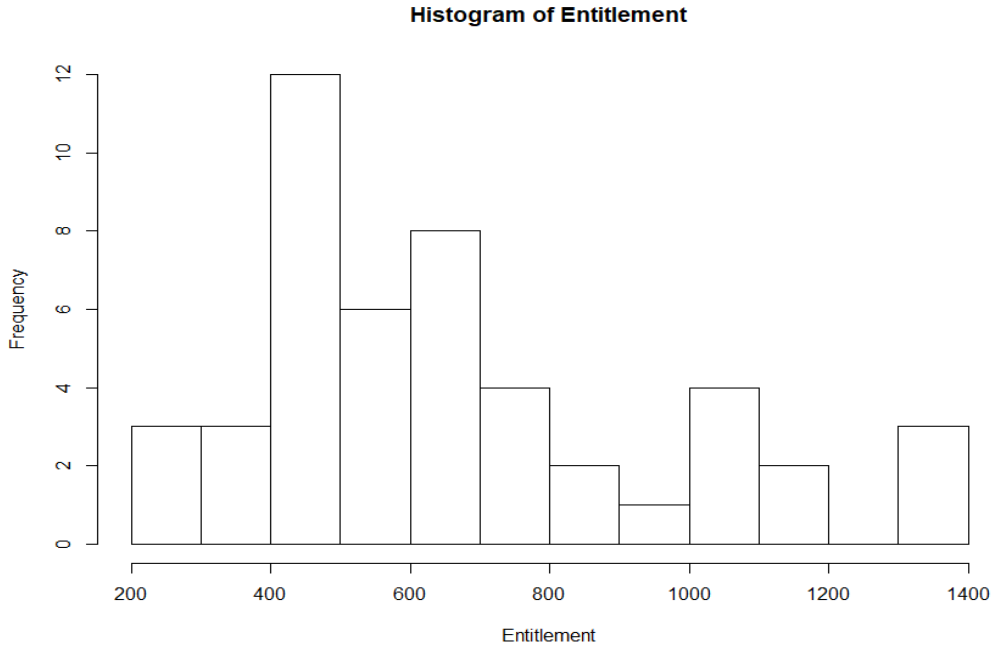
Min.	1st Qu.	Median	3rd Qu.	Max.
0.5	46.5	93.35	196.72	439.6



EDA on Entitlement

It's a numeric variable with sample mean = 660.8146, sample variance = 82046.76

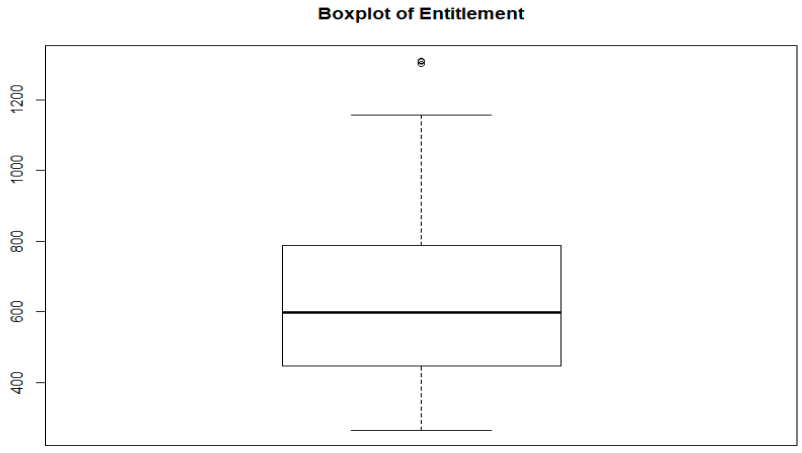
The histogram of Entitlement is



Histogram shows Entitlement is somewhat symmetric

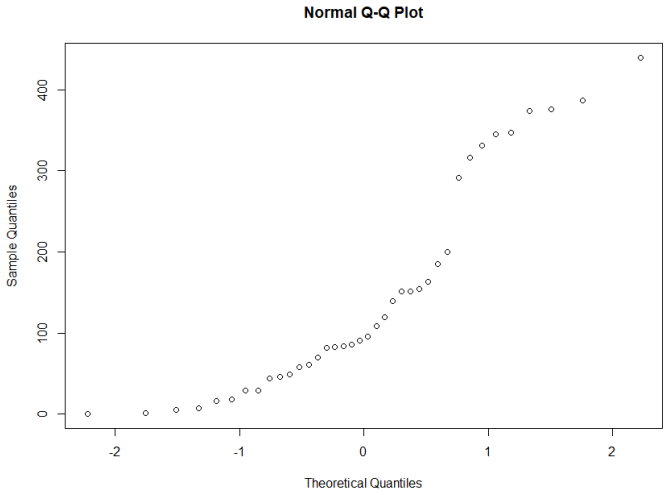
Five number summary of Entitlement is

Min.	1st Qu.	Median	3rd Qu.	Max.
265.2	447.8	598.8	780.2	1310.6



Normality Test on Bonus

The Q-Q plot of Bonus is



It doesn't show a 45 degree line.

Shapiro Wilk test gives a p-value of 0.0003017 so we can reject the null hypothesis that Bonus is normally distributed.

Assignment Answers on Bonus

Sample mean of Bonus = 145.7053

1. **Assuming variance unknown and non-normality a 95% confidence interval of mean for Bonus is (105.4421, 188.35)**

2. **A hypothesis test for the mean of Bonus equal to 30 vs not equal to 30 is rejected with a**

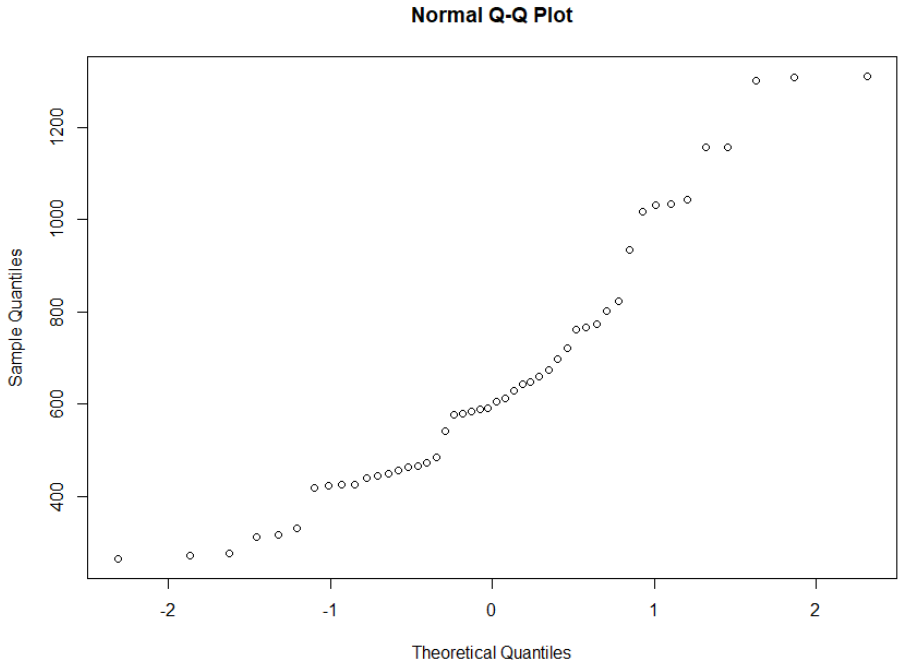
p-value = 2.575e-07 (Confidence Intervals also indicate)

Sample Variance of Bonus is = 17146.85

4. **95% confidence interval for the variance of Bonus is (9964.57, 22760.77)**

Normality test on Entitlement

The Q-Q plot of Entitlement is



Which does not show a 45 degree line.

Shapiro Wilk test gives a p-value of 0.002539 so we can reject the null hypothesis that Entitlement is normally distributed.

Assignment Answers on Entitlement

Sample mean of Entitlement = 660.8146

1. **Assuming variance unknown and non-normality a 95% confidence interval of mean for Entitlement is (583.5146, 741.9667)**

3. **A hypothesis test for the mean of Entitlement less than or equal to 1000 vs greater than 1000 resulted in a p-value =1 so Null hypothesis is accepted (Confidence Interval values are also supportive of Null Hypothesis)**

Sample Variance of Entitlement is = 82046.76

95% confidence interval for the variance of Entitlement is (49408.42, 111236.1)