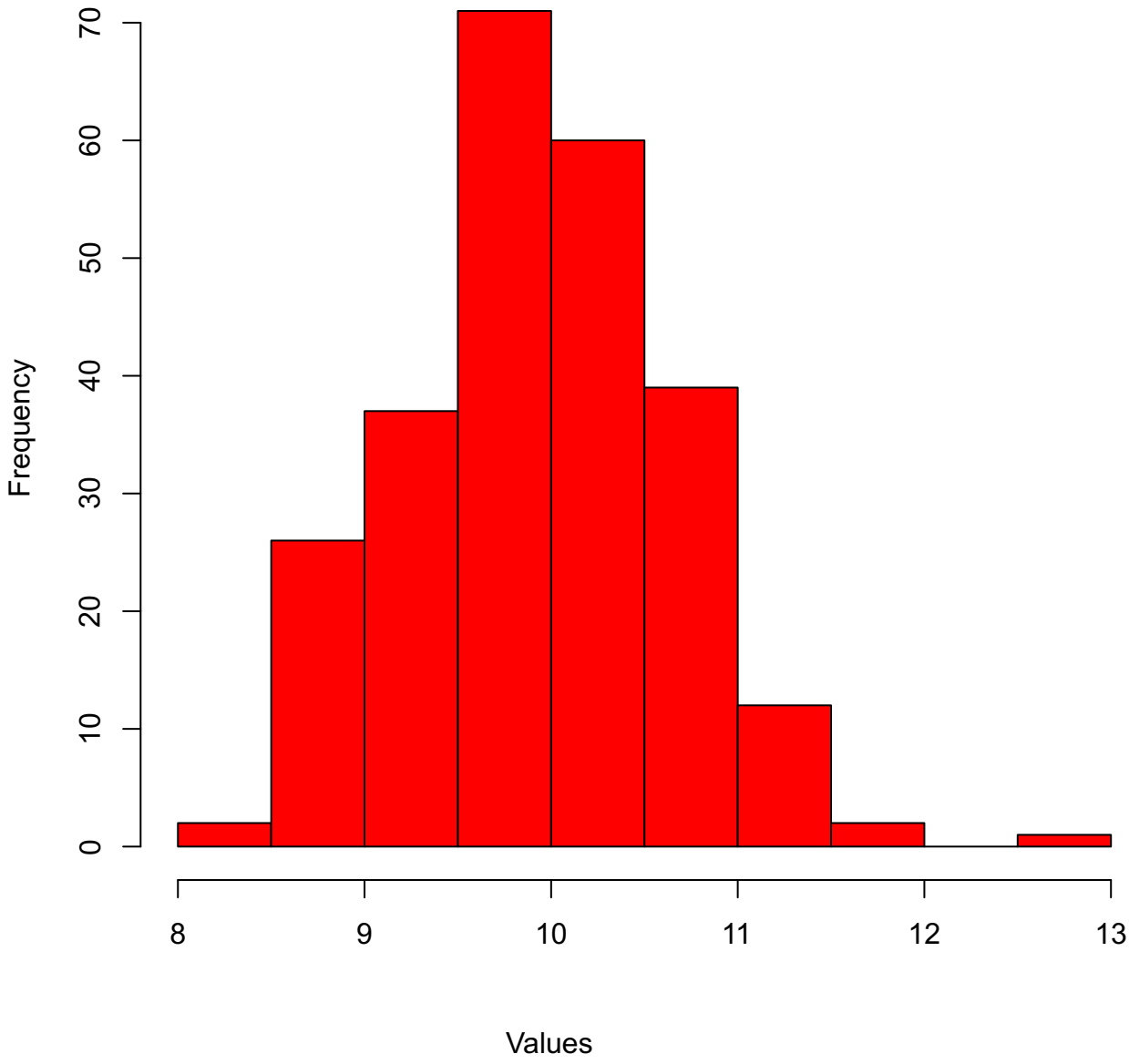
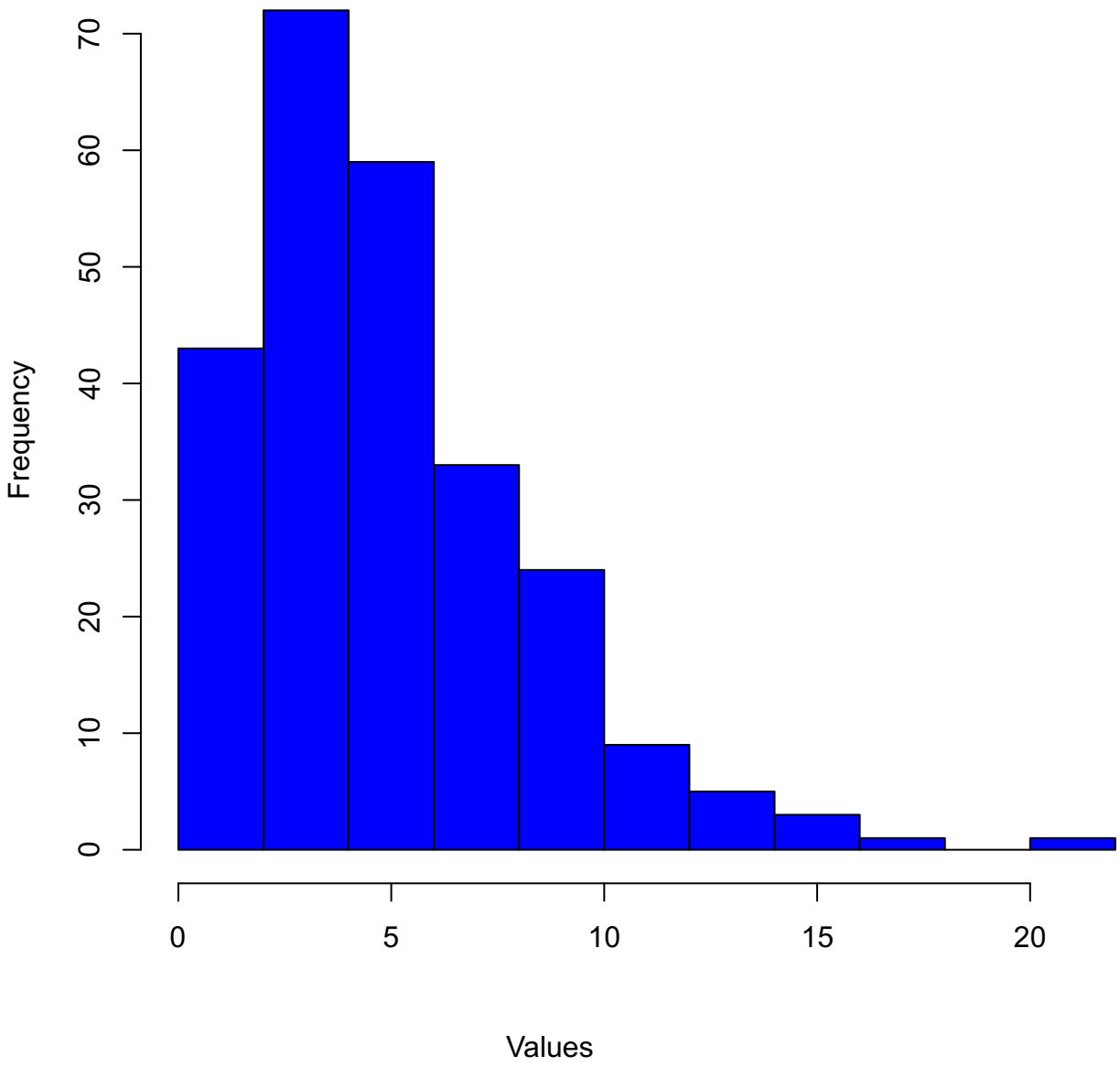
Section – 1

Part A

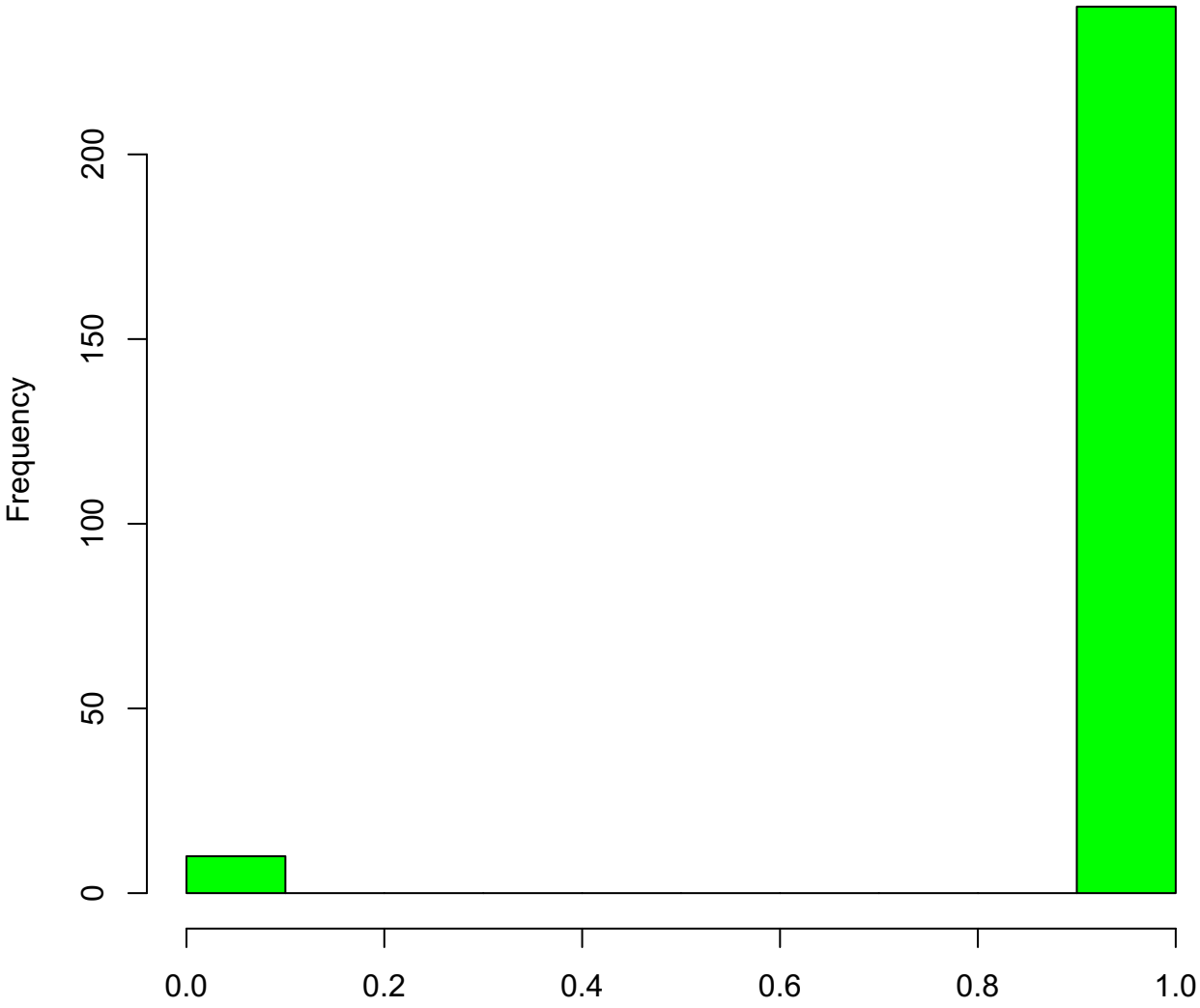


- Mean: 9.934069
- Variance: 0.5019804



- Mean: 9.934069
- Variance: 0.5019804

Histogram: Data Column 3



- Mean: 0.96
- Variance: 0.03855422

Part B

For Sample 1,99% confidence interval for the population mean is as follows:

Confidence Interval: Lower Bound: 9.817755, Upper Bound: 10.05038

This means that we can be 99% positive that the true population mean is between 9.817755 and 10.05038.

Hypothesis Testing Results:

The p-value = 0.4705026 is bigger than the significance level of 0.01, thus we cannot reject the null hypothesis. This means there is insufficient data to conclude that Sample 1's variance differs from 0.5.

Part C

Defective Part Proportion P-Value Hypothesis Test:

The p-value for the comparison of H0: p≥0.10 and H1: p<0.10 is 0.00078.

The p-value 0.00078 clearly contradicts the null hypothesis $H0$: $p \geq 0.10$ and supports the alternative hypothesis H1: $p < 0.10$.

This clearly supports the claim that defective parts are less than 10% of overall production.