

## Output for Central Limit Theorem

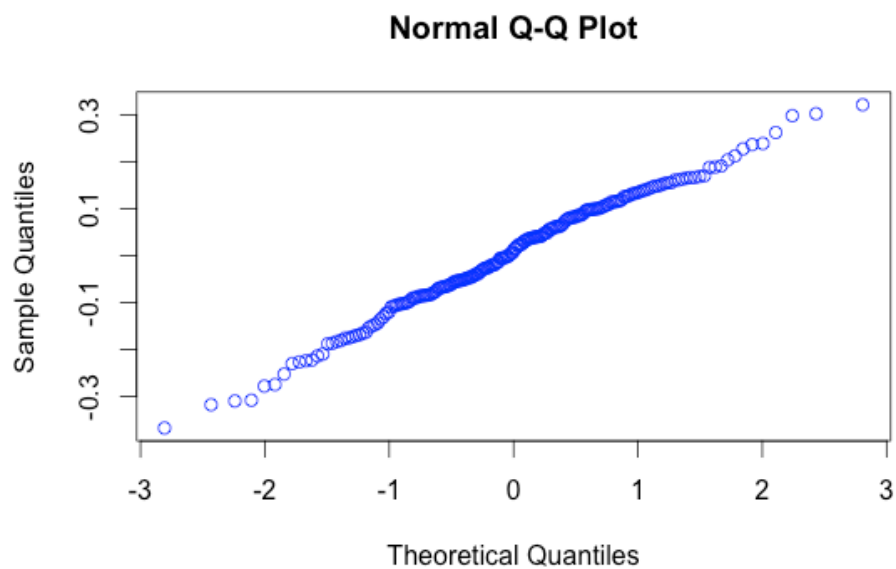
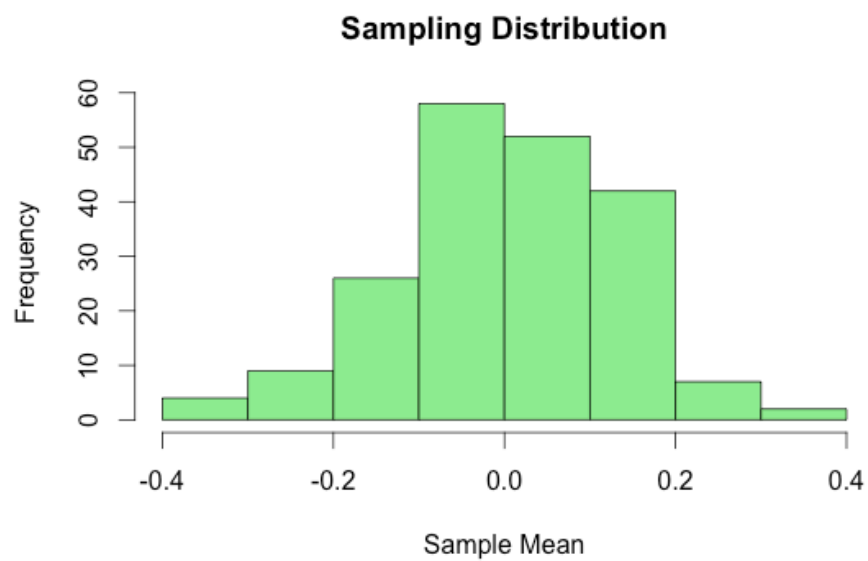
Following are the outputs from the R code for proving CLT for different standard distributions with number of samples = 200 and sample size = 60.

- 1) Population with Normal Distribution with  $\mu = 0$ ,  $\sigma = 1$

### Output

Mean = 0.004687627

SD = 0.1295891

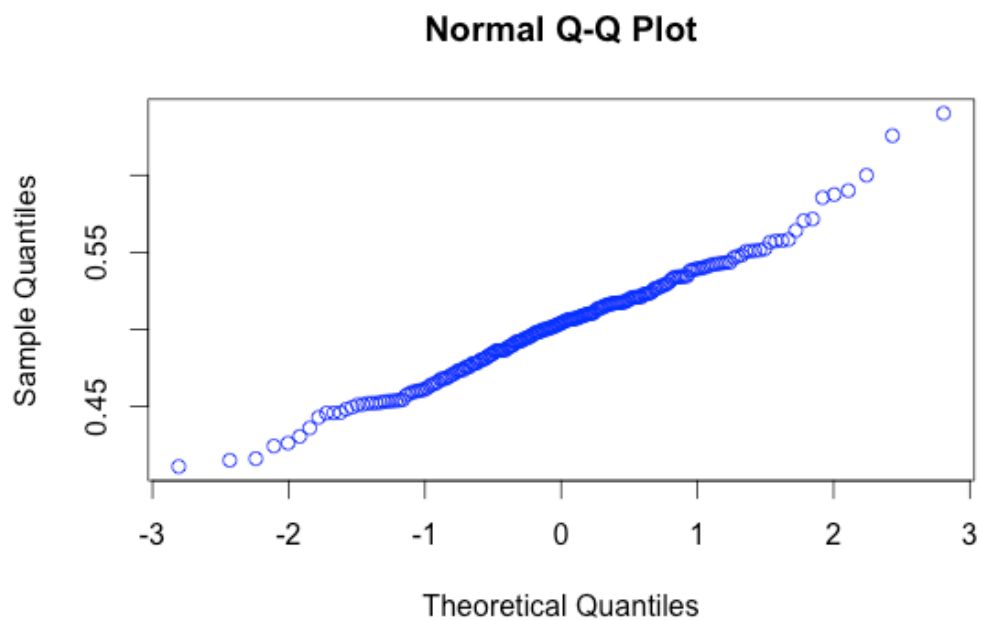
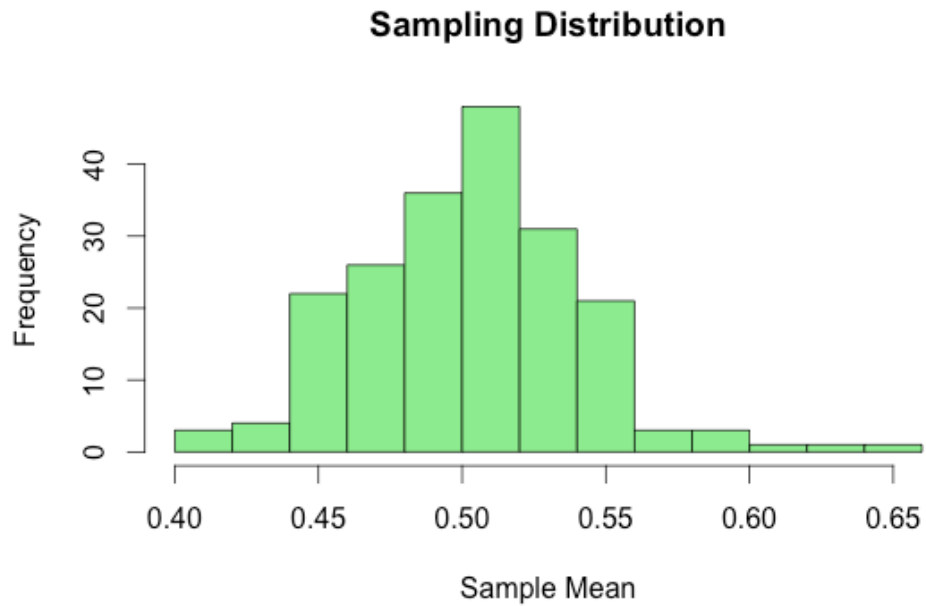


2) Population with Uniform Distribution with min = 0, max = 1

**Output**

**Mean = 0.5024882**

**SD = 0.03796853**

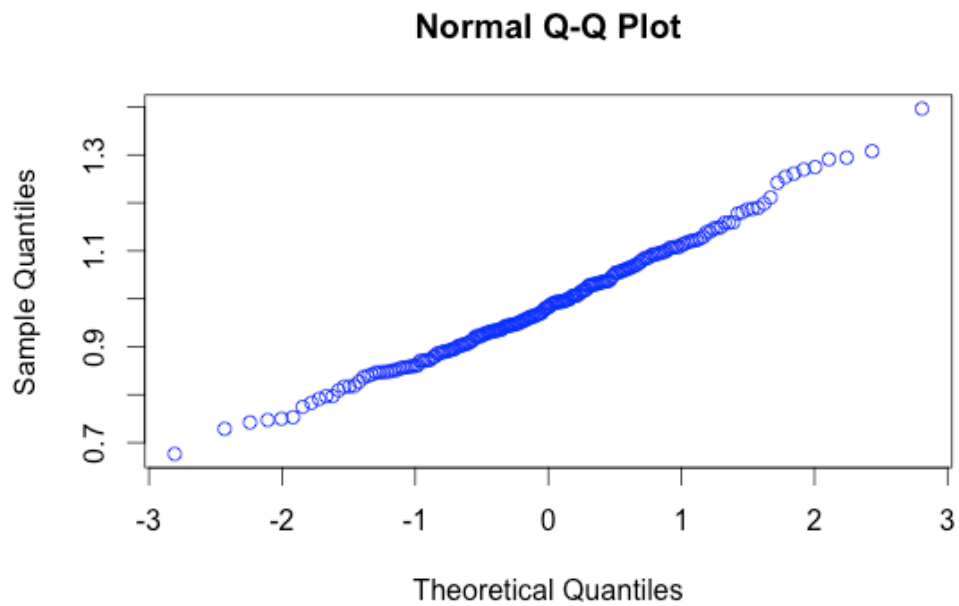
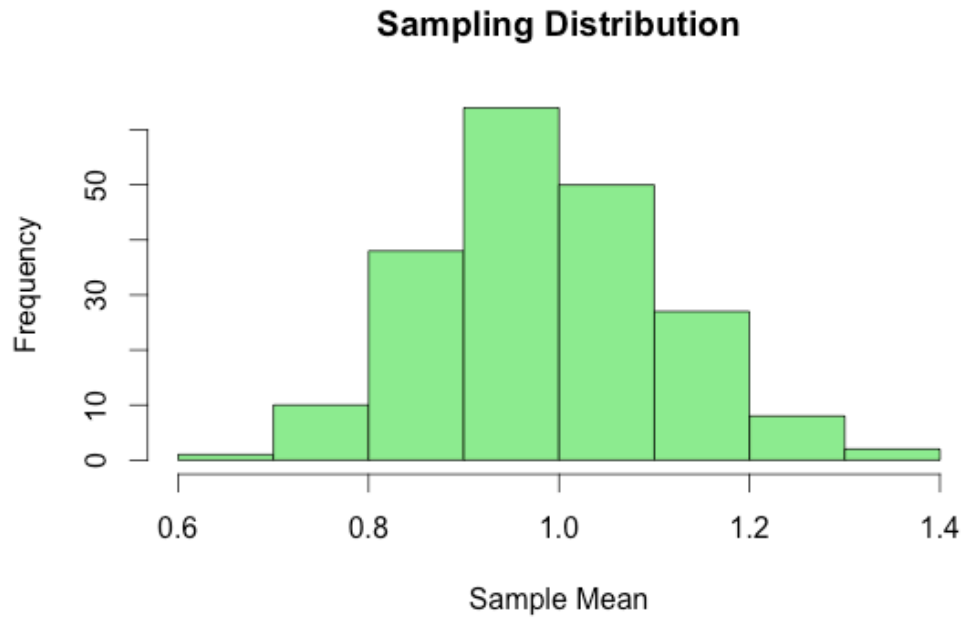


3) Population with Exponential Distribution with  $\lambda = 1$

**Output**

**Mean = 0.9902294**

**SD = 0.1258124**



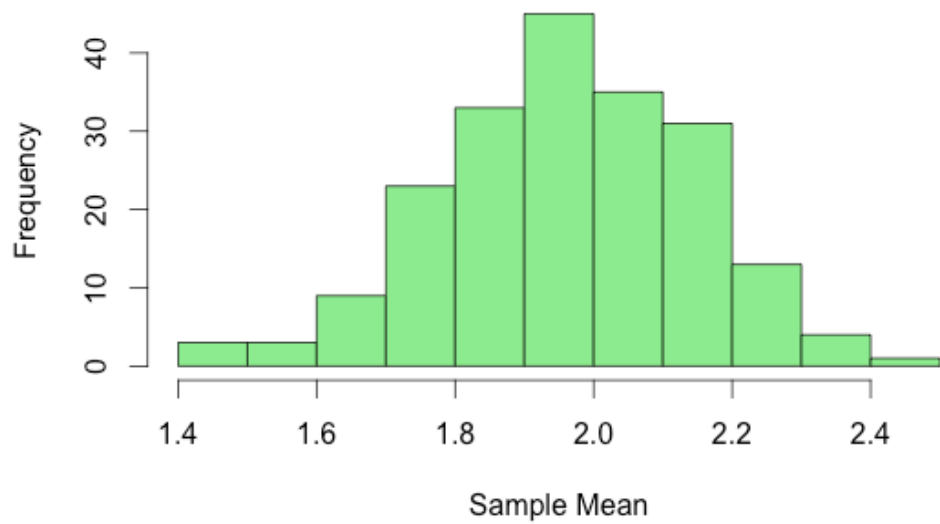
4) Population with Poisson Distribution with  $\lambda = 2$

**Output**

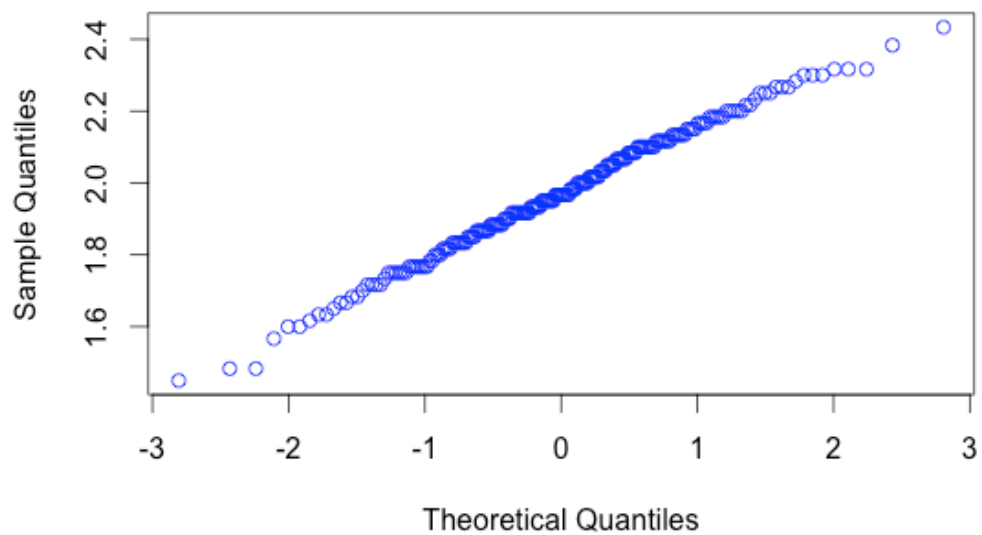
**Mean = 1.969917**

**SD = 0.1857402**

**Sampling Distribution**



**Normal Q-Q Plot**



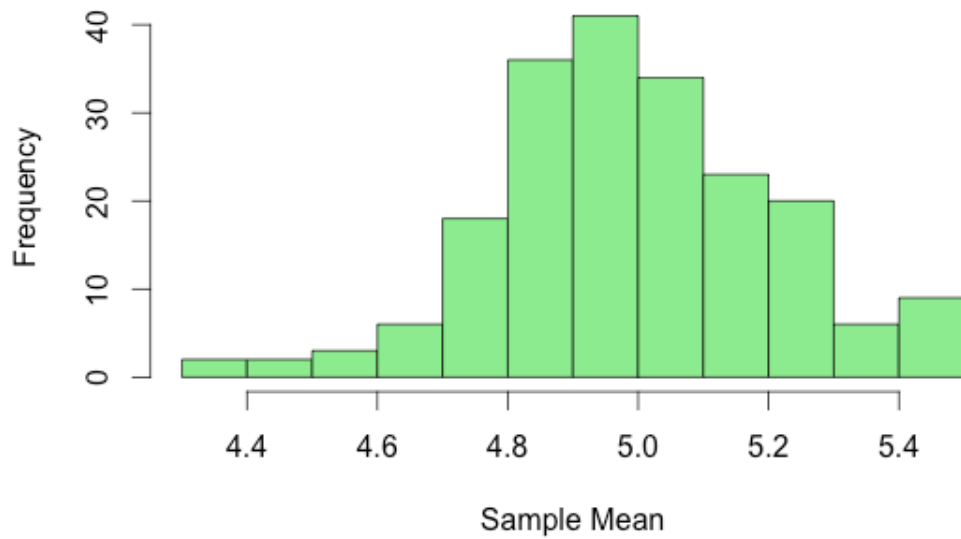
5) Population with Binomial Distribution with trials = 10, probability/trial = 0.5

**Output**

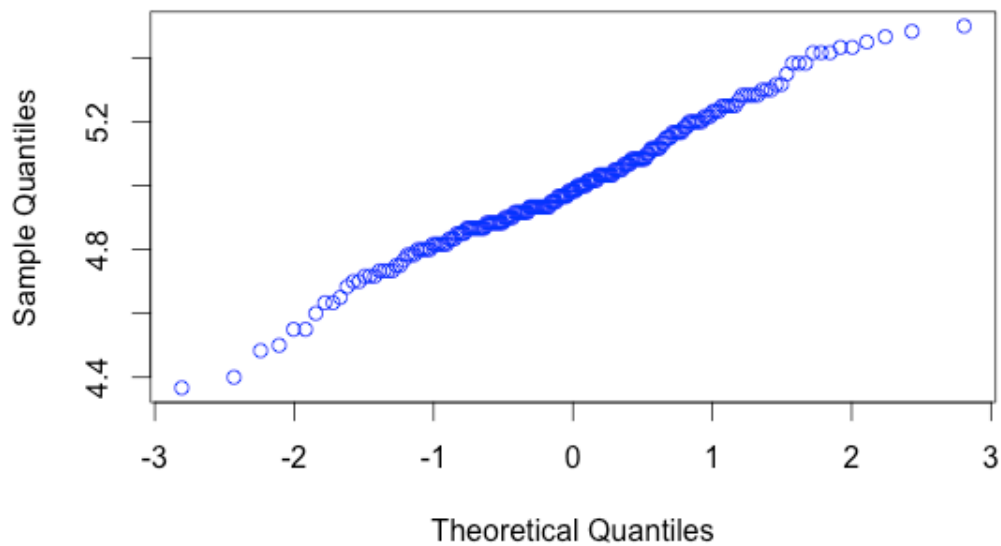
**Mean = 5.000333**

**SD = 0.2132867**

**Sampling Distribution**



**Normal Q-Q Plot**



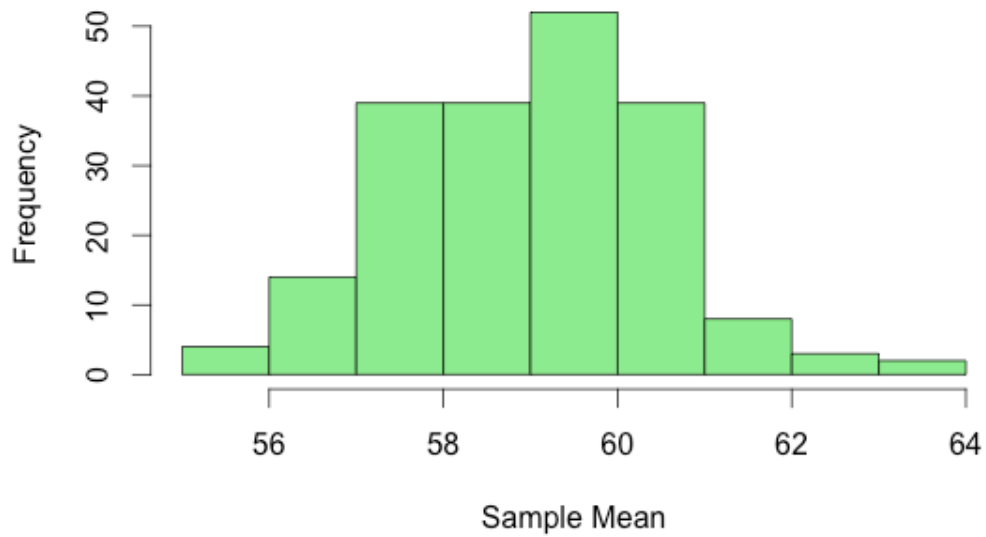
6) Population with Chi-Square Distribution with degrees of freedom = 59

**Output**

**Mean = 58.93663**

**SD = 1.491939**

**Sampling Distribution**



**Normal Q-Q Plot**

