

Part 1: Simulation Exercise Instructions

IGOR

EXAMPLE:

```
n <- 40
Simulations <- 1000
Lambda <- 0.2

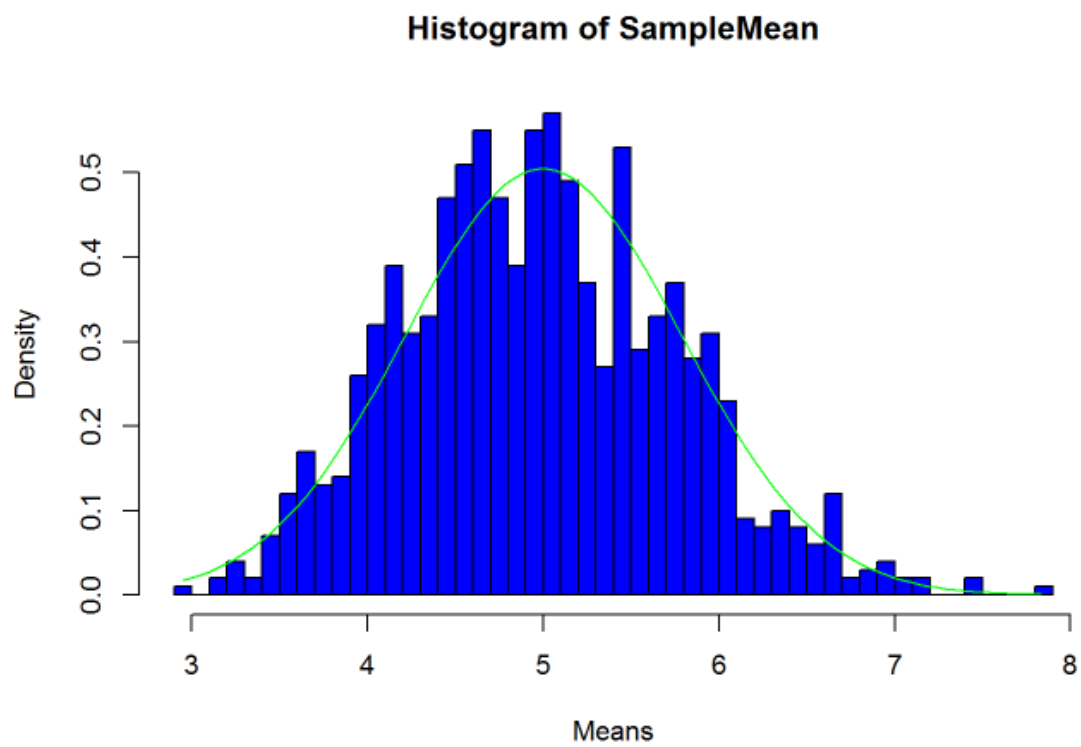
SampleMean <- NULL
for(i in 1:Simulations) {
  SampleMean <- c(SampleMean, mean(rexp(n, Lambda)))
}
mean(SampleMean)
## [1] 4.978479
```

SAMPLE:

```
Variance <- var(SampleMean)
```

DISTRIBUTION:

```
hist(SampleMean, breaks = n, prob = T, col = "blue", xlab = "Means")
x <- seq(min(SampleMean), max(SampleMean), length = 100)
lines(x, dnorm(x, mean = 1/Lambda, sd = (1/Lambda/sqrt(n))), pch = 25,
col = "green")
```



```
qqnorm(SampleMean)  
qqline(SampleMean, col = "blue")
```