

Exercise 3

The R code:

```
> table100<-read.table('call_duration_100.txt')
> table10000<-read.table('call_duration_10000.txt')
> a<-2
> b<-1
> x1<-table100$x
> x2<-table10000$x
> hist(x1, breaks=nclass.Sturges(x1))
> lines(density(x1), lwd = 2, col = "red")
> hist(x2, breaks=nclass.Sturges(table100$x),probability=TRUE)
> lines(density(x2), lwd = 2, col = "red")

> pgamma(1, a, scale=b)
[1] 0.2642411
> 1-pgamma(2,a,scale=b)
[1] 0.4060058
> E_call_duration<-a*b
> E_call_duration
[1] 2
> Var_call_duration<-a*b^2
> Var_call_duration
[1] 2
> qgamma(0.75, a, scale=b)
[1] 2.692635
> qgamma(0.25, a, scale=b)
[1] 0.9612788
```