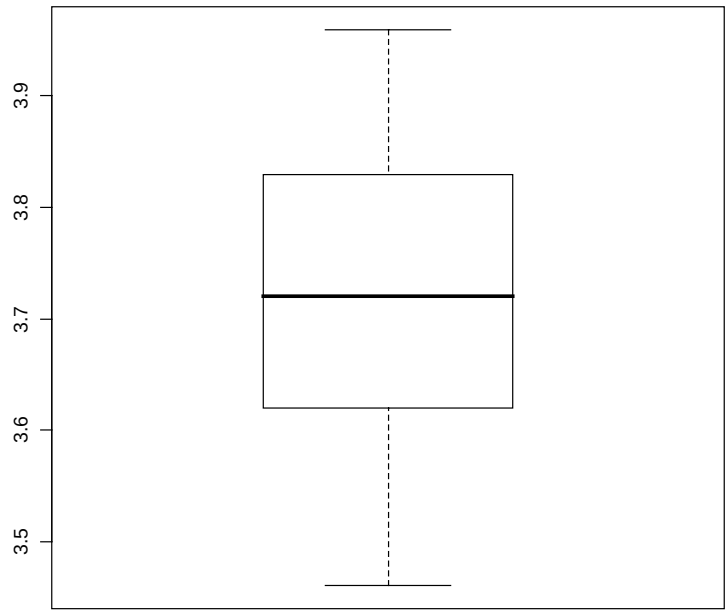
PROBABILIDADES Y ESTADÍSTICA
Práctica 6 - Gráficos

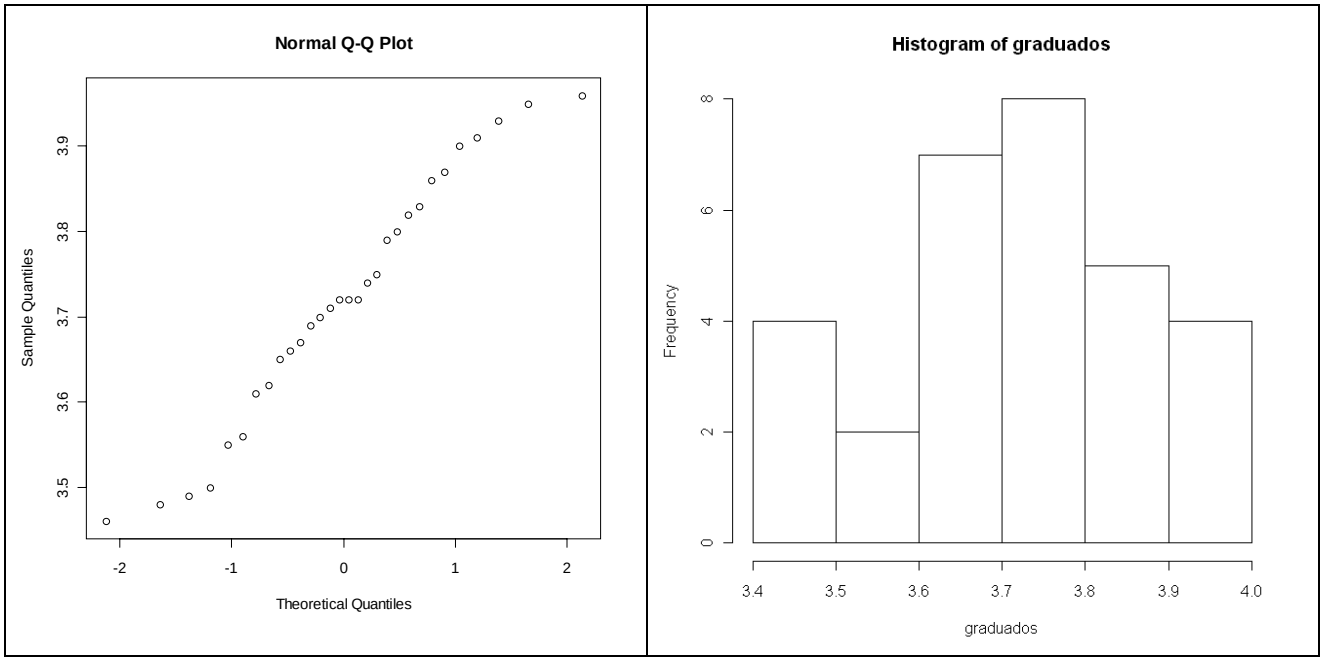
Ejercicio 2

```
graduados<-scan("C:\\probacomp\\datos\\graduados.txt")
boxplot(graduados)
```



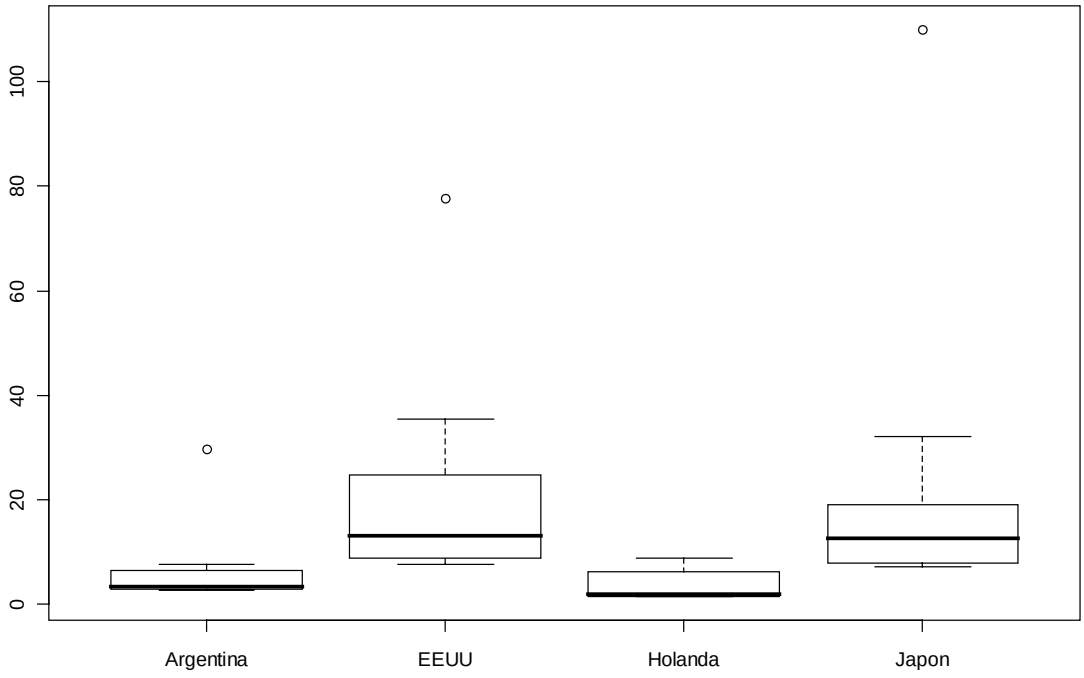
Otros gráficos

```
qqnorm(graduados)
hist(graduados)
```



Ejercicio 3

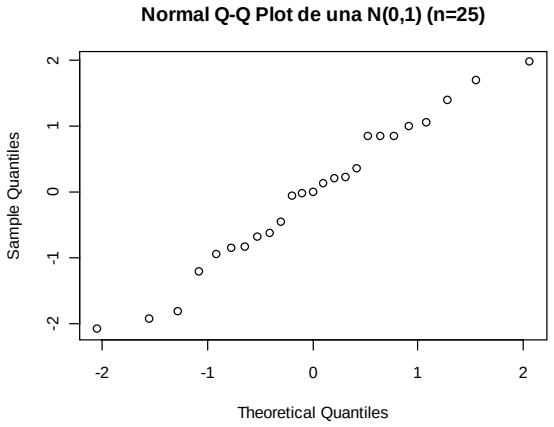
```
ciudades<-read.table("C:\\probacomp\\datos\\ciudades.txt", header = TRUE)
boxplot(ciudades)
```

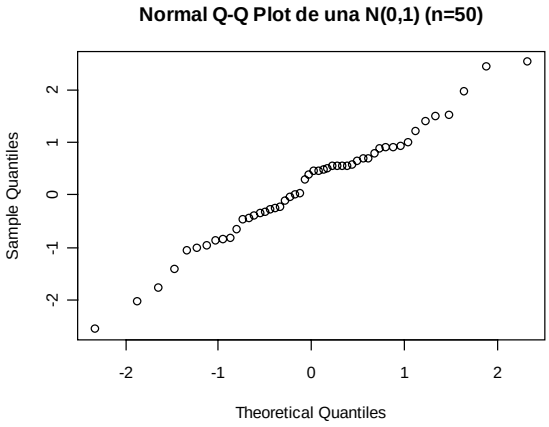


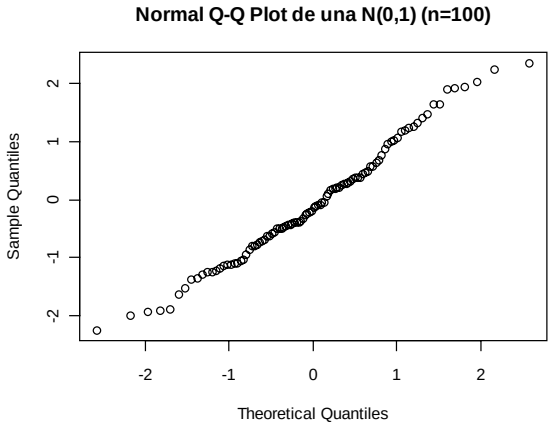
Ejercicio 4

a) # Generamos los datos:

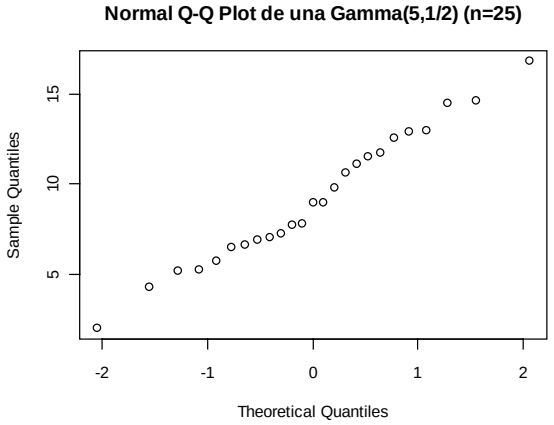
```
 normal25<-rnorm(25)
 normal50<-rnorm(50)
 normal100<-rnorm(100)

# la siguiente instrucción divide la pantalla gráfica en 4
 par(mfrow=c(2,2))
qqnorm(normal25,main="Normal Q-Q Plot de una N(0,1) (n=25)")
 qqnorm(normal50,main="Normal Q-Q Plot de una N(0,1) (n=50)")
 qqnorm(normal100,main="Normal Q-Q Plot de una N(0,1) (n=100)")
```

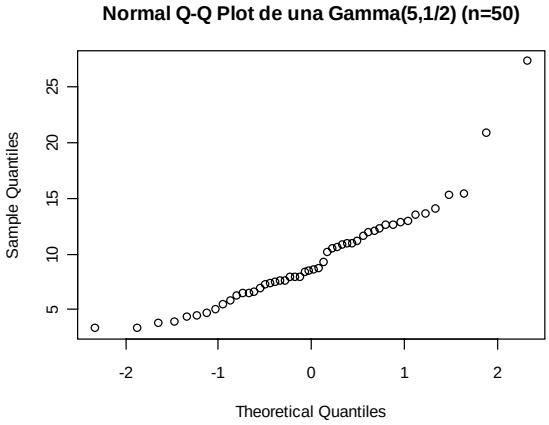


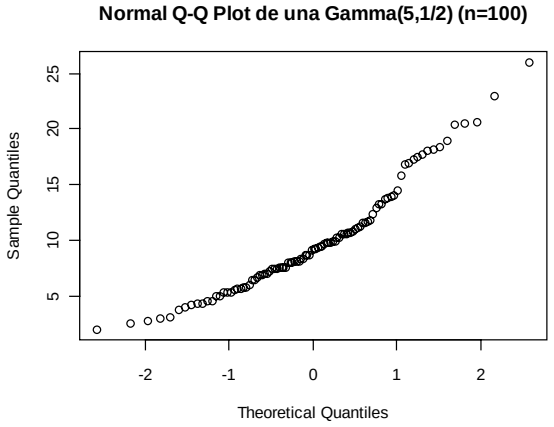





```
b) gama25<-rgamma(25,shape=5,rate=1/2)
gama50<-rgamma(50,shape=5,rate=1/2)
gama100<-rgamma(100,shape=5,rate=1/2)

 qqnorm(gama25,main="Normal Q-Q Plot de una Gamma(5,1/2) (n=25)")
 qqnorm(gama50,main="Normal Q-Q Plot de una Gamma(5,1/2) (n=50)")
 qqnorm(gama100,main="Normal Q-Q Plot de una Gamma(5,1/2) (n=100)")
```

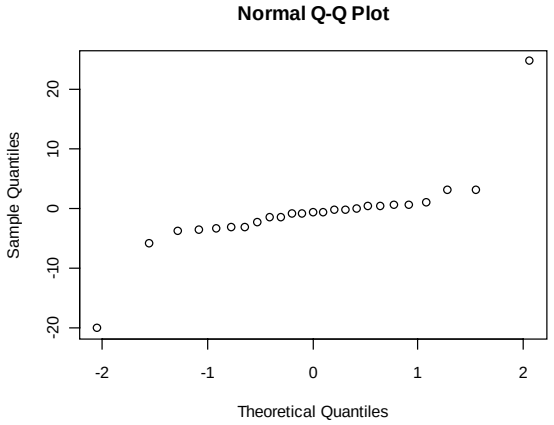


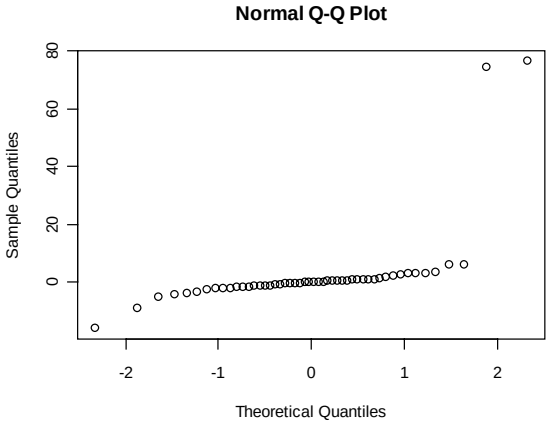


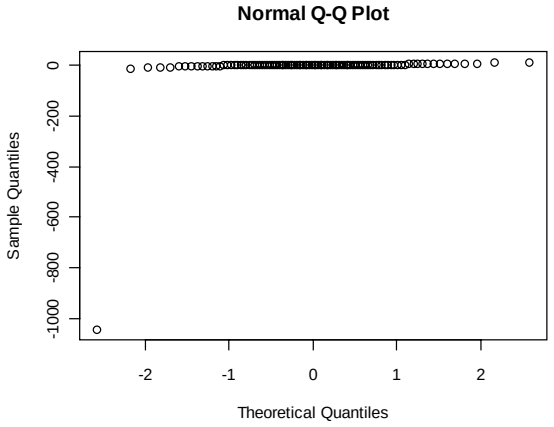


c)

```
zz<-rnorm(25)
uu<-runif(25)
yy<-zz/uu
qqnorm(yy)

zz<-rnorm(50)
uu<-runif(50)
yy<-zz/uu
qqnorm(yy)

zz<-rnorm(100)
uu<-runif(100)
yy<-zz/uu
qqnorm(yy)
```

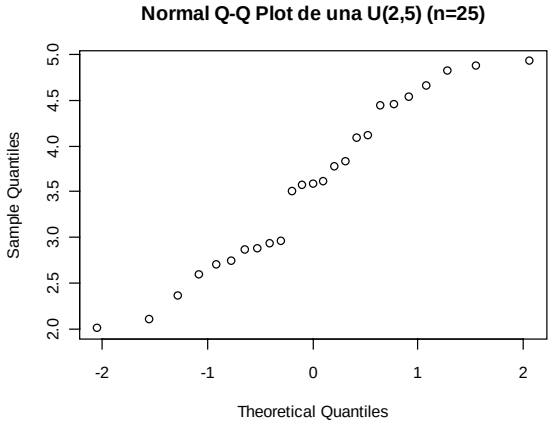


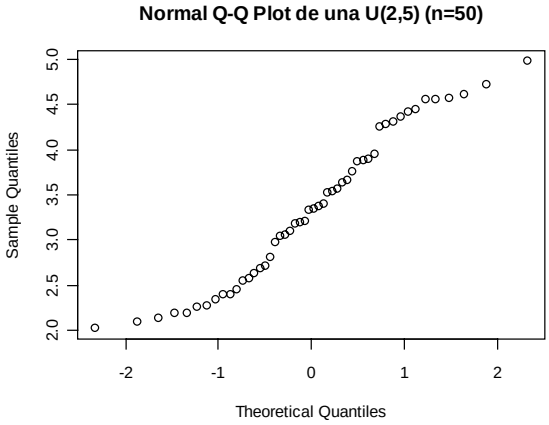


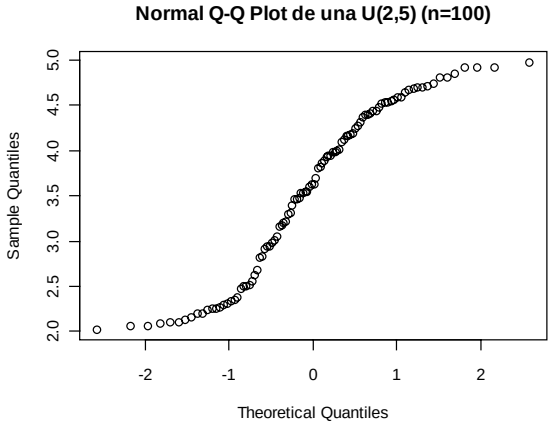


d)

```
 d1<-runif(25,min=2,max=5)
 d2<-runif(50,min=2,max=5)
 d3<-runif(100,min=2,max=5)

  qqnorm(d1,main="Normal Q-Q Plot de una U(2,5) (n=25)")
  qqnorm(d2,main="Normal Q-Q Plot de una U(2,5) (n=50)")
  qqnorm(d3,main="Normal Q-Q Plot de una U(2,5) (n=100)")
```

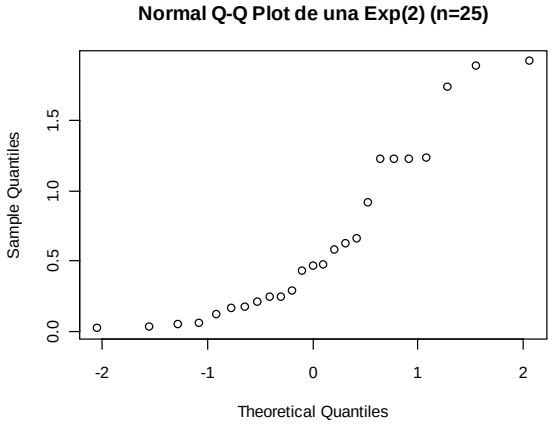


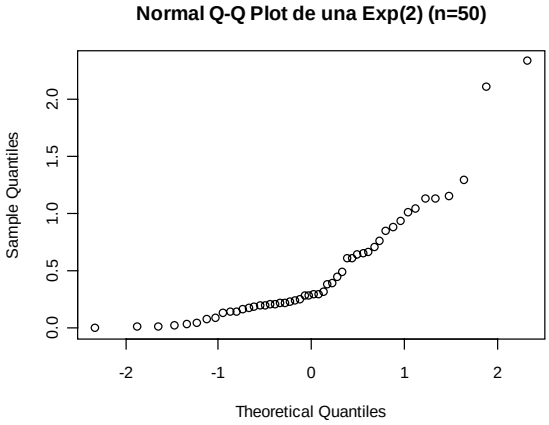


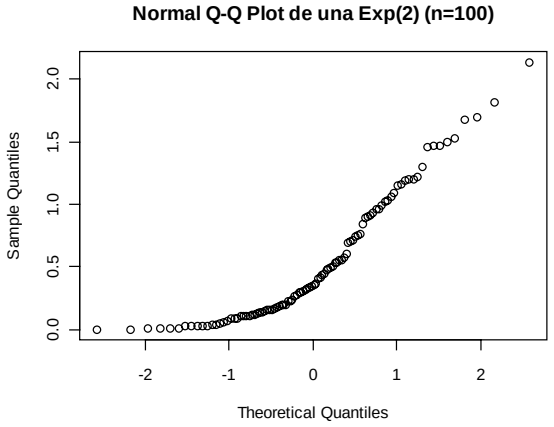


e)

```
 e1<-rexp(25,rate=2)
 e2<-rexp(50,rate=2)
 e3<-rexp(100,rate=2)

 qqnorm(e1,main="Normal Q-Q Plot de una Exp(2) (n=25)")
 qqnorm(e2,main="Normal Q-Q Plot de una Exp(2) (n=50)")
 qqnorm(e3,main="Normal Q-Q Plot de una Exp(2) (n=100)")

# volvamos a tener la pantalla gráfica completa, sin divisiones
 par(mfrow=c(1,1))
```

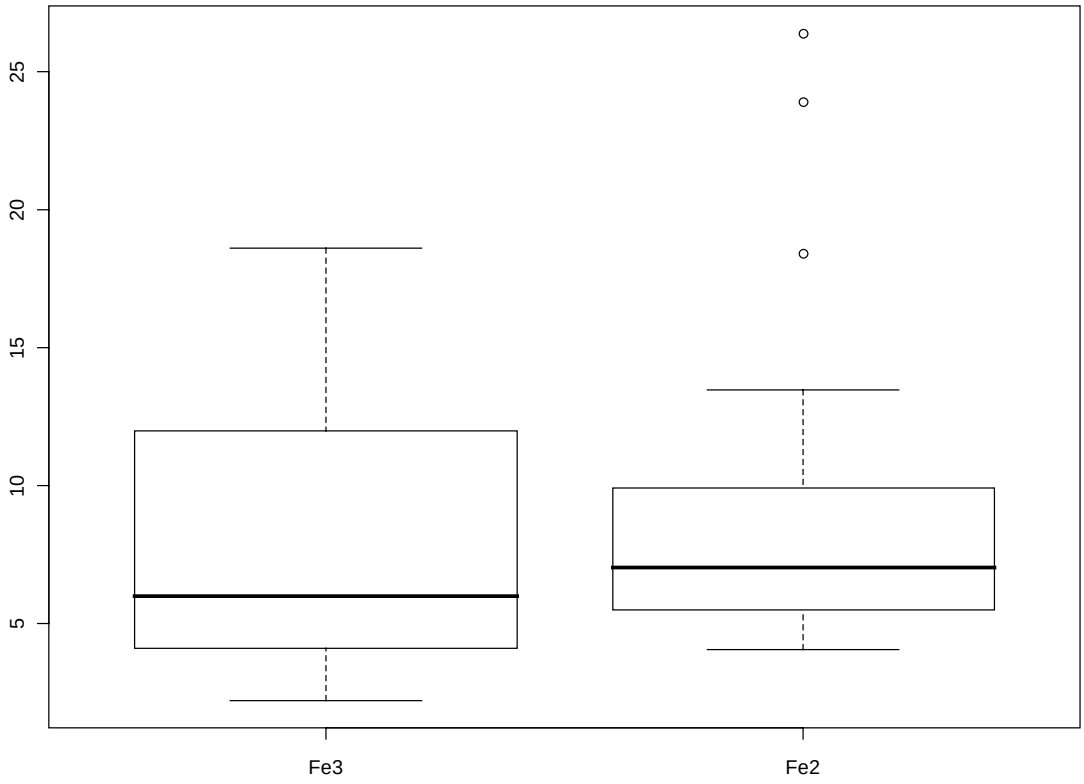


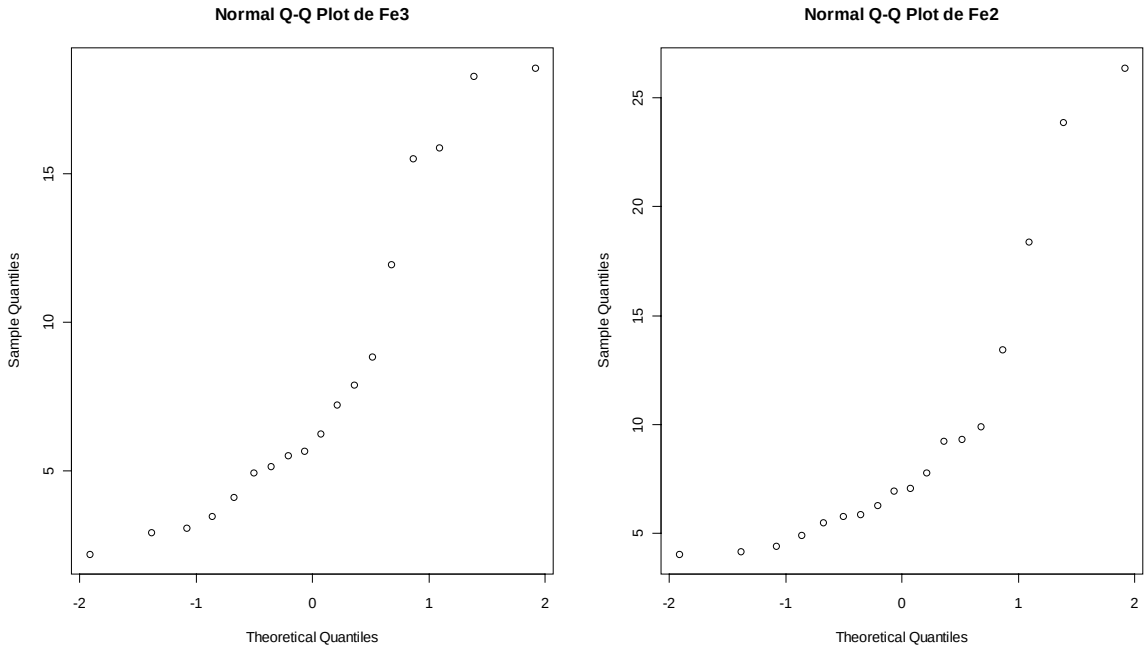




Ejercicio 5

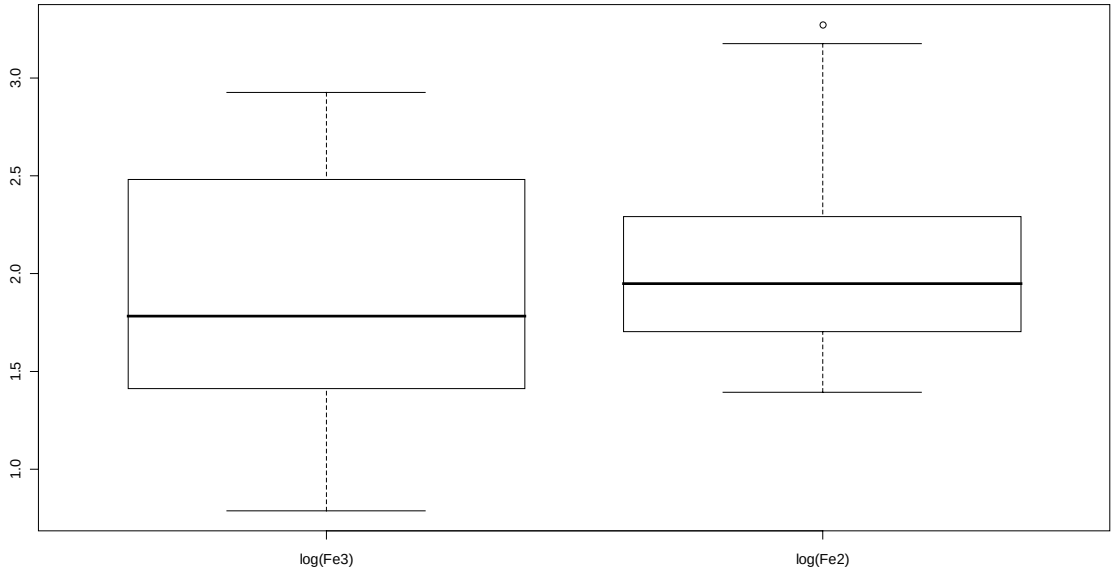
```
 hierro<-read.table("C:\\probacomp\\datos\\hierro.txt", header = TRUE)

boxplot(hierro)
attach(hierro) #esta instruccion le permite a R trabajar con Fe3, Fe2(las
columnas del archivo original) como si fueran objetos (Vectores columna
con nombre) por separado

par(mfrow=c(1,2)) #dividimos la pantalla gráfica en 2 columnas, una fila
 qqnorm(Fe3,main="Normal Q-Q Plot de Fe3")
 qqnorm(Fe2,main="Normal Q-Q Plot de Fe2")
```

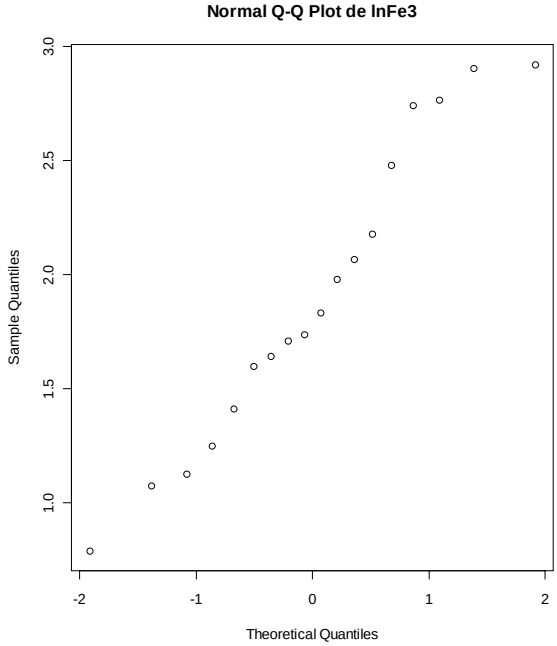

25
20
15
10
5
Fe3
Fe2

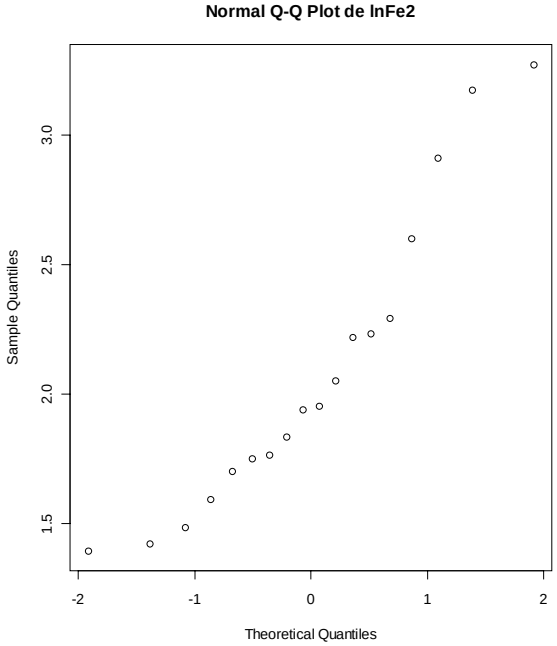

Normal Q-Q Plot de Fe3
Sample Quantiles
Theoretical Quantiles
-2
-1
0
1
2
5
10
15
Normal Q-Q Plot de Fe2
Sample Quantiles
Theoretical Quantiles
-2
-1
0
1
2
5
10
15
20
25

b)

```
 lnFe3<-log(Fe3)
 lnFe2<-log(Fe2)
 par(mfrow=c(1,1))
 boxplot(lnFe3,lnFe2,names=c("log(Fe3)","log(Fe2)"))
 par(mfrow=c(1,2))
  qqnorm(lnFe3,main="Normal Q-Q Plot de lnFe3")
  qqnorm(lnFe2,main="Normal Q-Q Plot de lnFe2")
par(mfrow=c(1,1))
```







Ejercicio 6

```
c) cpu<-scan("C:\\probacomp\\datos\\cpu.txt")
 hist(cpu)
boxplot(cpu)
```