Clase práctica 22 del 1/11/2012. Instrucciones de R y gráficos de los ejercicios 4 y 6 de la lista del 25/10/2012

Ejercicio 4. Consumo diario de energía (MJ/día) en dos grupos de mujeres: delgadas y obesas.

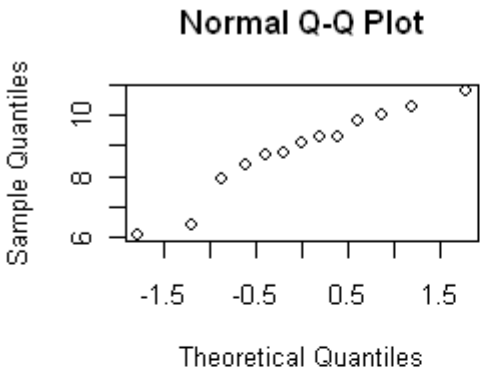
	Delgadas	Obesas
	6.02	8.42
	6.40	9.16
	7.88	9.69
	8.39	10.21
	8.70	10.40
	8.76	10.48
	9.09	10.93
	9.27	11.14
	9.30	11.14
	9.80	11.81
	10.03	
	10.27	
	10.84	
n	13	10
Media muestral	8.827	10.338
Desv. Est.	1.411	1.018

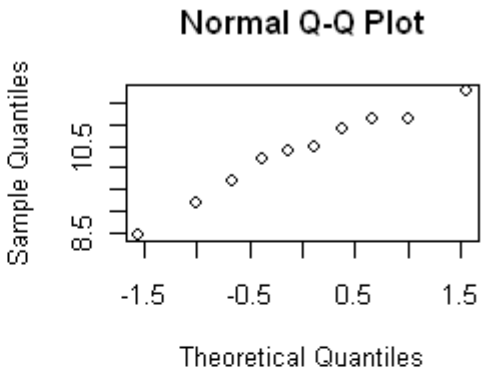
Instrucciones:

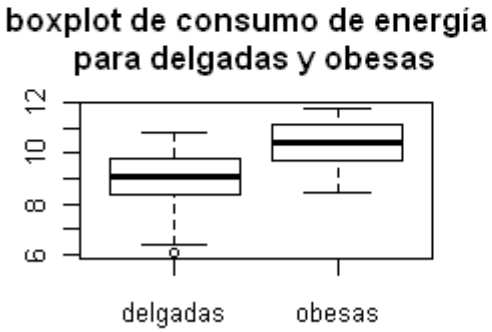
```
par(mfrow=c(2,2))  #divide a la pantalla gráfica en 4
qqnorm(delgadas)
qqnorm(obesas)
boxplot(delgadas,obesas,main="boxplot de consumo de energía
para delgadas y obesas",names=c("delgadas","obesas"))
par(mfrow=c(1,1))    #vuelve a poner la pantalla gráfica como antes
```

```
> stem(delgadas)

  The decimal point is at the |

   6 | 04
   7 | 9
   8 | 478
   9 | 1338
  10 | 038

> stem(obesas)

  The decimal point is at the |

   8 | 4
   9 | 27
  10 | 2459
  11 | 118

> t.test(delgadas,obesas,alternative="two.sided",paired=FALSE,
var.equal=FALSE,conf.level=0.95,)

        Welch Two Sample t-test
```

```
data:  delgadas and obesas
t = -2.9816, df = 20.947, p-value = 0.007128
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -2.5651894 -0.4569644
sample estimates:
mean of x mean of y
 8.826923 10.338000

> var.test(delgadas,obesas,alternative="two.sided")

        F test to compare two variances

data:  delgadas and obesas
F = 1.9208, num df = 12, denom df = 9, p-value = 0.3329
alternative hypothesis: true ratio of variances is not equal to 1
95 percent confidence interval:
 0.496555 6.599518
sample estimates:
ratio of variances
          1.920784

> t.test(delgadas,obesas,alternative="two.sided",paired=FALSE,
var.equal=TRUE,conf.level=0.95,)

        Two Sample t-test

data:  delgadas and obesas
t = -2.8561, df = 21, p-value = 0.009459
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -2.6113570 -0.4107968
sample estimates:
mean of x mean of y
 8.826923 10.338000

> sd(delgadas)
[1] 1.411131
> sd(obesas)
[1] 1.018188

> var(delgadas)
[1] 1.99129
> var(obesas)
[1] 1.036707
> var(delgadas)/13 +var(obesas)/10
[1] 0.2568468
> sqrt(var(delgadas)/13 +var(obesas)/10)
[1] 0.5068006
```







Ejercicio 6. Proporciones

```
> prop.test(x=c(189,154),n=c(1000,1000),alternative="greater",correct=F)

        2-sample test for equality of proportions without continuity
correction

data:  c(189, 154) out of c(1000, 1000)
X-squared = 4.3107, df = 1, p-value = 0.01894
alternative hypothesis: greater
95 percent confidence interval:
 0.007301769 1.000000000                  <- este ic es unilateral
sample estimates:
prop 1 prop 2
 0.189  0.154

> sqrt(4.3107)
[1] 2.076223
```

Para obtener el intervalo de confianza correcto:

```
> prop.test(x=c(189,154),n=c(1000,1000),alternative="two.sided",correct=F)

        2-sample test for equality of proportions without continuity
correction

data:  c(189, 154) out of c(1000, 1000)
X-squared = 4.3107, df = 1, p-value = 0.03787
alternative hypothesis: two.sided
95 percent confidence interval:
 0.001995522 0.068004478
```