

## Tarea 7

A01275465 Carol Arrieta Moreno

2023-08-31

```
M = read.csv("Estatura-peso_HyM.csv") #leer la base de datos
```

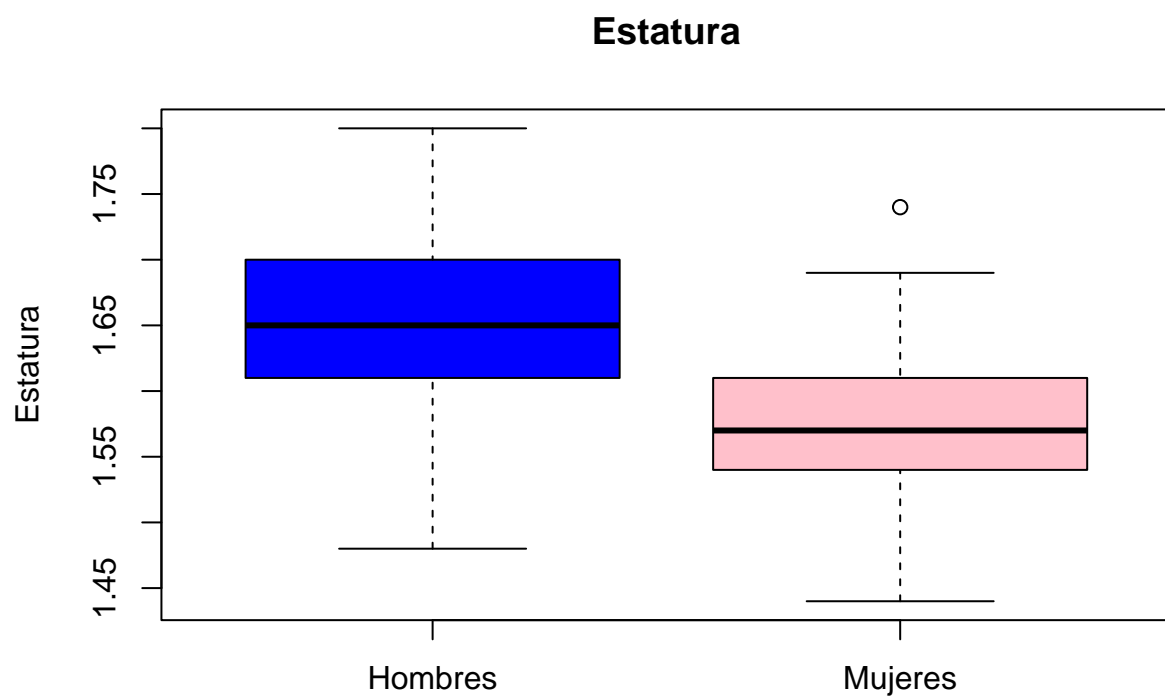
```
MM = subset(M,M$Sexo=="M")
MH = subset(M,M$Sexo=="H")
M1=data.frame(MH$Estatura,MH$Peso,MM$Estatura,MM$Peso)

n=4 #número de variables
d=matrix(NA,ncol=7,nrow=n)
for(i in 1:n){
  d[i,]<-c(as.numeric(summary(M1[,i])),sd(M1[,i]))
}
m=as.data.frame(d)

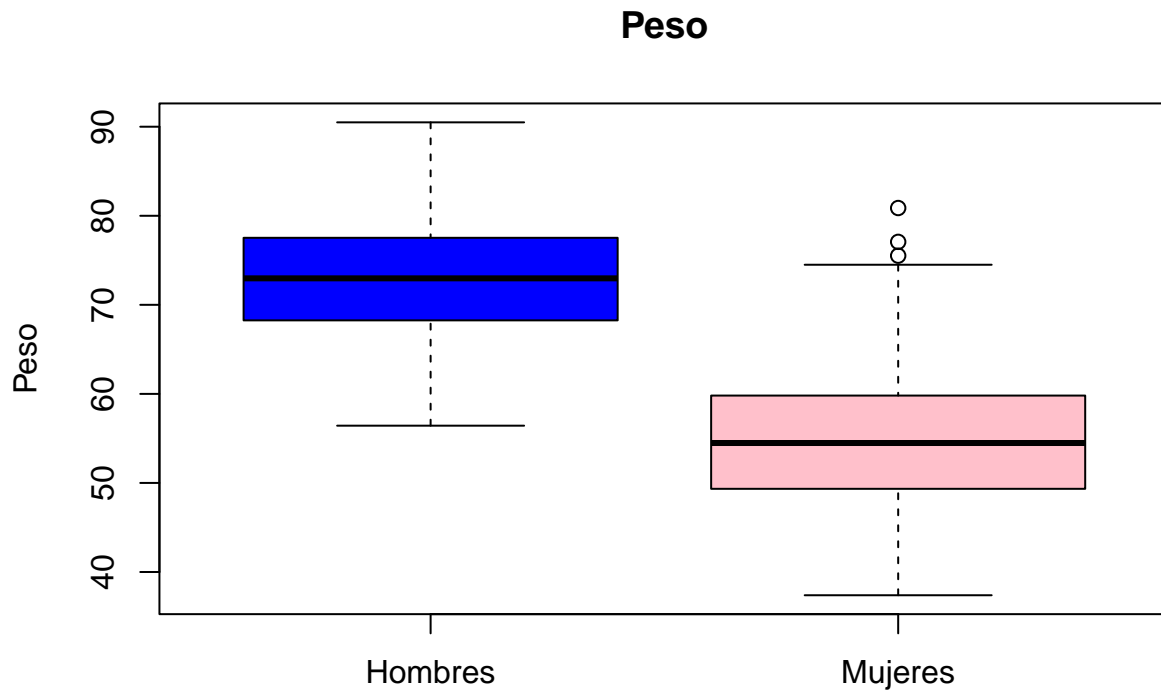
row.names(m)=c("H-Estatura","H-Peso","M-Estatura","M-Peso")
names(m)=c("Mínimo","Q1","Mediana","Media","Q3","Máximo","Desv Est")
m
```

```
##           Minimo      Q1 Mediana      Media      Q3 Máximo      Desv Est
## H-Estatura   1.48  1.6100   1.650  1.653727  1.7000   1.80 0.06173088
## H-Peso       56.43 68.2575  72.975 72.857682 77.5225  90.49 6.90035408
## M-Estatura   1.44  1.5400   1.570  1.572955  1.6100   1.74 0.05036758
## M-Peso       37.39 49.3550  54.485 55.083409 59.7950  80.87 7.79278074
```

```
boxplot(M$Estatura~M$Sexo, ylab="Estatura", xlab="", col=c("blue","pink"), names=c("Hombres", "Mujeres"))
```



```
boxplot(M$Peso~M$Sexo, ylab="Peso", xlab="", names=c("Hombres", "Mujeres"), col=c("blue","pink"), main=
```



```
A = lm(M$Peso ~ M$Estatura + M$Sexo)
```

```
b0 = A$coefficients[1]
b1 = A$coefficients[2]
b2 = A$coefficients[3]
```

```
cat("Peso =", b0, "+", b1, "Estatura", b2, "SexoM")
```

```
## Peso = -74.7546 + 89.26035 Estatura -10.56447 SexoM
```

```
summary(A)
```

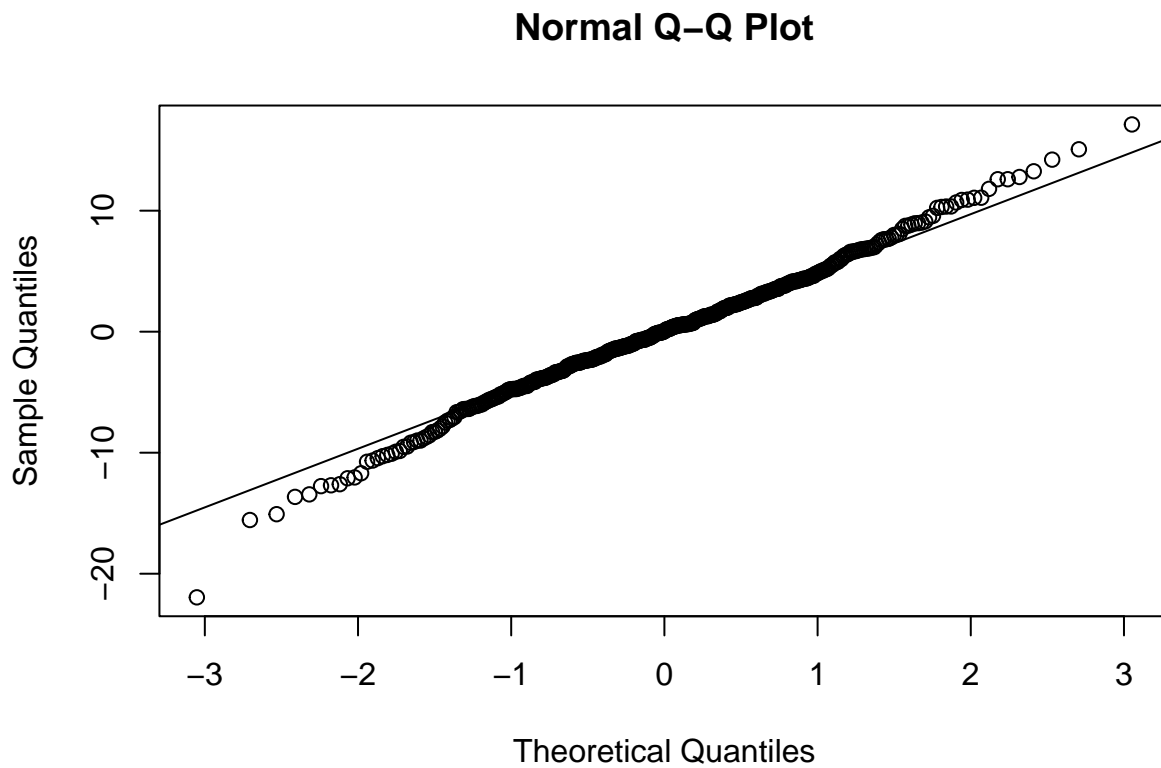
```
##
## Call:
## lm(formula = M$Peso ~ M$Estatura + M$Sexo)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -21.9505  -3.2491   0.0489   3.2880  17.1243
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  -74.7546     7.5555  -9.894  <2e-16 ***
## M$Estatura    89.2604     4.5635  19.560  <2e-16 ***
```

```
## M$SexoM      -10.5645      0.6317 -16.724   <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 5.381 on 437 degrees of freedom
## Multiple R-squared:  0.7837, Adjusted R-squared:  0.7827
## F-statistic: 791.5 on 2 and 437 DF,  p-value: < 2.2e-16
```

```
shapiro.test(A$residuals)
```

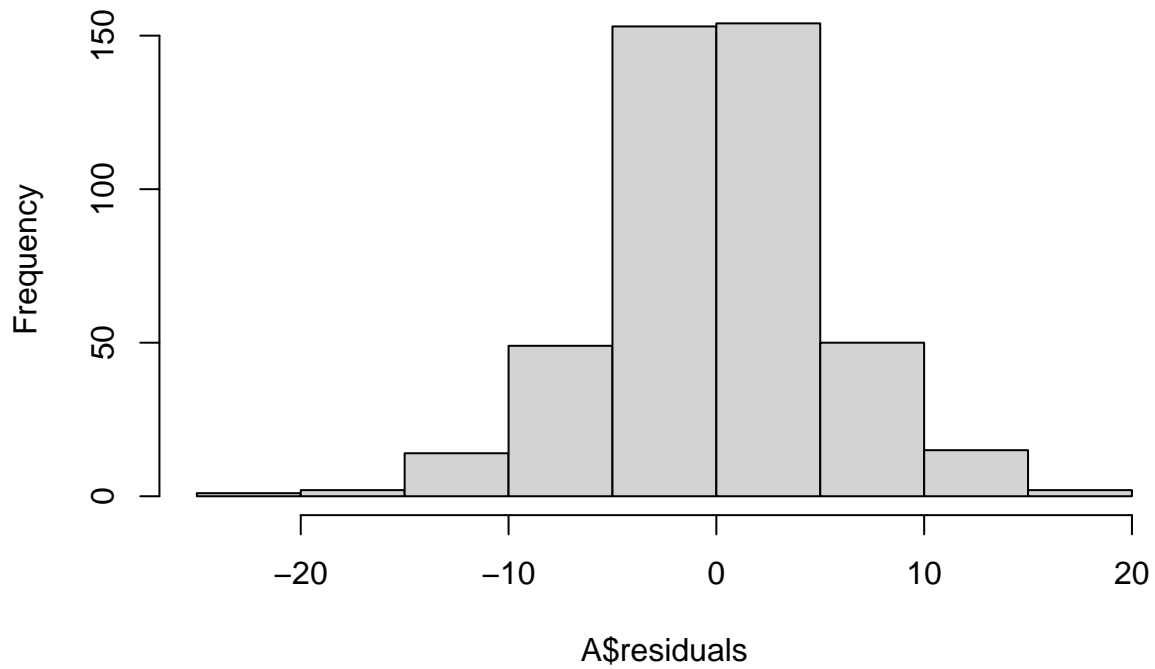
```
##
## Shapiro-Wilk normality test
##
## data:  A$residuals
## W = 0.99337, p-value = 0.0501
```

```
qqnorm(A$residuals)
qqline(A$residuals)
```



```
hist(A$residuals)
```

## Histogram of A\$residuals



```
t.test(A$residuals)
```

```
##  
## One Sample t-test  
##  
## data: A$residuals  
## t = 2.4085e-16, df = 439, p-value = 1  
## alternative hypothesis: true mean is not equal to 0  
## 95 percent confidence interval:  
## -0.5029859 0.5029859  
## sample estimates:  
## mean of x  
## 6.163788e-17
```

```
plot(A$fitted.values,A$residuals)
```

