Ejercicios

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Ejercicio 1

```r
library(MASS)
library(robustbase)
#rownames(mammals)
#rownames(Animals2)
#plot(Animals2)
intersect(mammals, Animals2)
```

```
## data frame with 0 columns and 0 rows
```

```r
setdiff(mammals, Animals2)
```

```
##                            body    brain
## Arctic fox                3.385    44.50
## Owl monkey                0.480    15.50
## Mountain beaver           1.350     8.10
## Cow                     465.000   423.00
## Grey wolf                36.330   119.50
## Goat                     27.660   115.00
## Roe deer                 14.830    98.20
## Guinea pig                1.040     5.50
## Verbet                    4.190    58.00
## Chinchilla                0.425     6.40
## Ground squirrel           0.101     4.00
## Arctic ground squirrel    0.920     5.70
## African giant pouched rat 1.000     6.60
## Lesser short-tailed shrew 0.005     0.14
## Star-nosed mole           0.060     1.00
## Nine-banded armadillo     3.500    10.80
## Tree hyrax                2.000    12.30
## N.A. opossum              1.700     6.30
## Asian elephant         2547.000  4603.00
## Big brown bat             0.023     0.30
## Donkey                  187.100   419.00
## Horse                   521.000   655.00
## European hedgehog         0.785     3.50
## Patas monkey             10.000   115.00
## Cat                       3.300    25.60
## Galago                    0.200     5.00
## Genet                     1.410    17.50
## Giraffe                 529.000   680.00
## Gorilla                 207.000   406.00
## Grey seal                85.000   325.00
```

```
## Rock hyrax-a                  0.750   12.30
## Human                        62.000 1320.00
## African elephant           6654.000 5712.00
## Water opossum                 3.500    3.90
## Rhesus monkey                 6.800  179.00
## Kangaroo                     35.000   56.00
## Yellow-bellied marmot         4.050   17.00
## Golden hamster                0.120    1.00
## Mouse                         0.023    0.40
## Little brown bat              0.010    0.25
## Slow loris                    1.400   12.50
## Okapi                       250.000  490.00
## Rabbit                        2.500   12.10
## Sheep                        55.500  175.00
## Jaguar                      100.000  157.00
## Chimpanzee                   52.160  440.00
## Baboon                       10.550  179.50
## Desert hedgehog               0.550    2.40
## Giant armadillo              60.000   81.00
## Rock hyrax-b                  3.600   21.00
## Raccoon                       4.288   39.20
## Rat                           0.280    1.90
## E. American mole              0.075    1.20
## Mole rat                      0.122    3.00
## Musk shrew                    0.048    0.33
## Pig                         192.000  180.00
## Echidna                       3.000   25.00
## Brazilian tapir             160.000  169.00
## Tenrec                        0.900    2.60
## Phalanger                     1.620   11.40
## Tree shrew                    0.104    2.50
## Red fox                       4.235   50.40
```

```r
#rownames(commonAnimals)
```

Ejercicio 2

```r
library(MASS)
library(car)
```

```
## Loading required package: carData
```
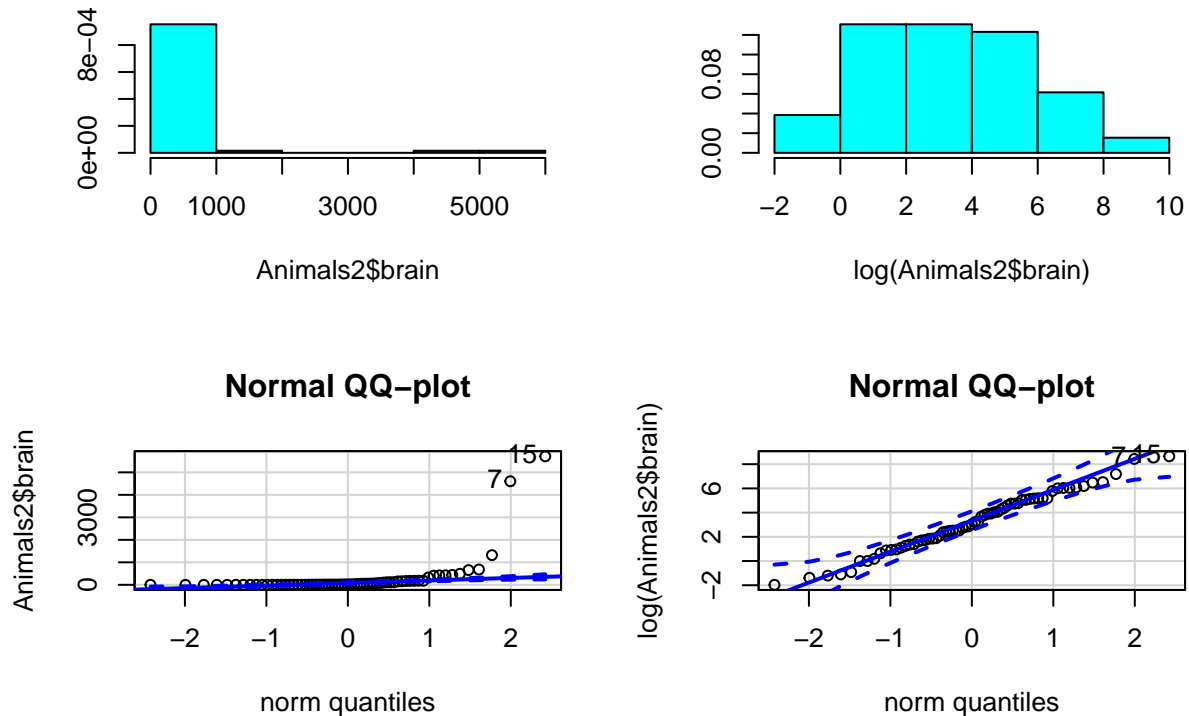
```r
library(robustbase)

par(mfrow=c(2,2))
truehist(Animals2$brain)
truehist(log(Animals2$brain))
qqPlot(Animals2$brain)
```

```
## [1] 15  7
```

```r
title("Normal QQ-plot")
qqPlot(log(Animals2$brain))
```

```
## [1] 15  7
```

```r
title("Normal QQ-plot")
```


Normal QQ-plot

Normal QQ-plot

Ejercicio 3

```r
libReturn<-library()
```

```
## Warning in library(): library '/usr/local/lib/R/site-library' contains no
## packages
```

```r
str(libReturn)
```

```
## List of 3
##  $ header : NULL
##  $ results: chr [1:157, 1:3] "beanplot" "bit" "bit64" "blob" ...
##   ..- attr(*, "dimnames")=List of 2
##   .. ..$ : NULL
##   .. ..$ : chr [1:3] "Package" "LibPath" "Title"
##  $ footer : NULL
##  - attr(*, "class")= chr "libraryIQR"
```

Ejercicio 4

```r
library(MASS)
str(cabbages)
```

```
## 'data.frame':    60 obs. of  4 variables:
##  $ Cult : Factor w/ 2 levels "c39","c52": 1 1 1 1 1 1 1 1 1 1 ...
##  $ Date : Factor w/ 3 levels "d16","d20","d21": 1 1 1 1 1 1 1 1 1 1 ...
##  $ HeadWt: num  2.5 2.2 3.1 4.3 2.5 4.3 3.8 4.3 1.7 3.1 ...
##  $ VitC  : int  51 55 45 42 53 50 50 52 56 49 ...
```

```r
length(which(is.na(cabbages)))
```

```
## [1] 0
```

Ejercicio 5

```
library(car)
summary(Chile)
```

```
##  region    population    sex           age          education
##  C :600   Min.   :  3750  F:1379   Min.   :18.00   P  :1107
##  M :100   1st Qu.: 25000  M:1321   1st Qu.:26.00   PS : 462
##  N :322   Median :175000           Median :36.00   S  :1120
##  S :718   Mean   :152222           Mean   :38.55   NA's:  11
##  SA:960   3rd Qu.:250000           3rd Qu.:49.00
##           Max.   :250000           Max.   :70.00
##                                    NA's   :1
##      income        statusquo          vote
##  Min.   :  2500   Min.   :-1.80301   A  :187
##  1st Qu.:  7500   1st Qu.:-1.00223   N  :889
##  Median : 15000   Median :-0.04558   U  :588
##  Mean   : 33876   Mean   : 0.00000   Y  :868
##  3rd Qu.: 35000   3rd Qu.: 0.96857   NA's:168
##  Max.   :200000   Max.   : 2.04859
##  NA's   :98       NA's   :17
```

Ejercicio 6

```
library(MASS)
library(car)
str(cabbages)
```
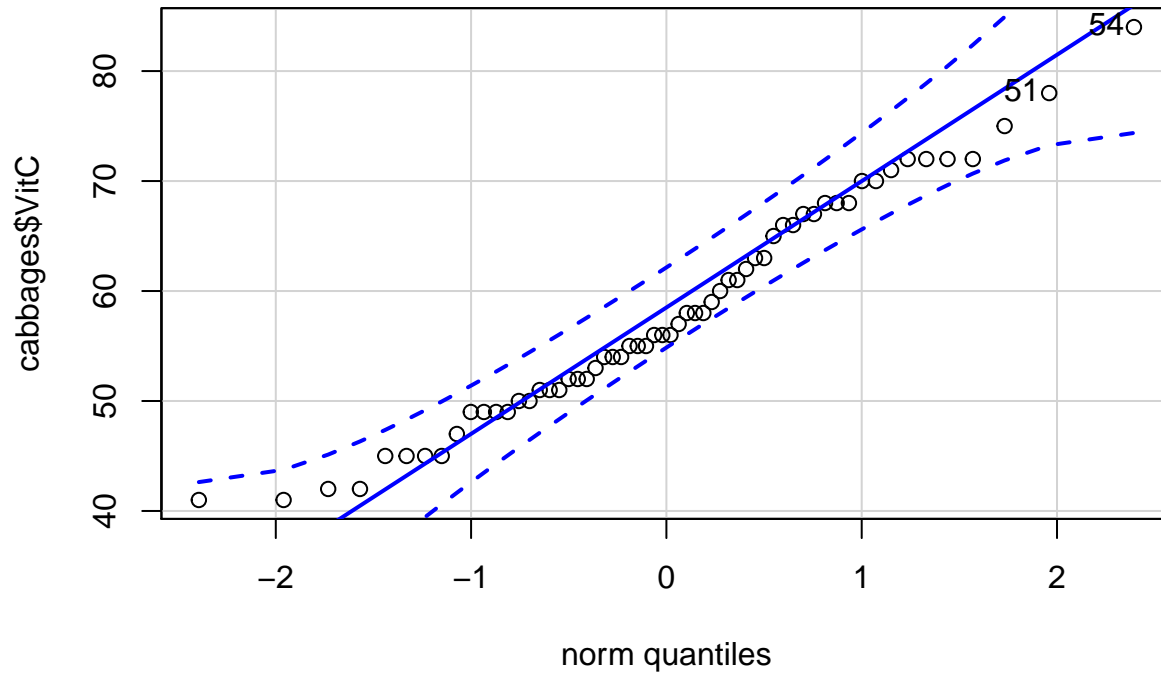
```
## 'data.frame':    60 obs. of  4 variables:
##  $ Cult  : Factor w/ 2 levels "c39","c52": 1 1 1 1 1 1 1 1 1 1 ...
##  $ Date  : Factor w/ 3 levels "d16","d20","d21": 1 1 1 1 1 1 1 1 1 1 ...
##  $ HeadWt: num  2.5 2.2 3.1 4.3 2.5 4.3 3.8 4.3 1.7 3.1 ...
##  $ VitC  : int  51 55 45 42 53 50 50 52 56 49 ...
```

```
qqPlot(cabbages$HeadWt)
```


4

```
## [1] 4 6
```
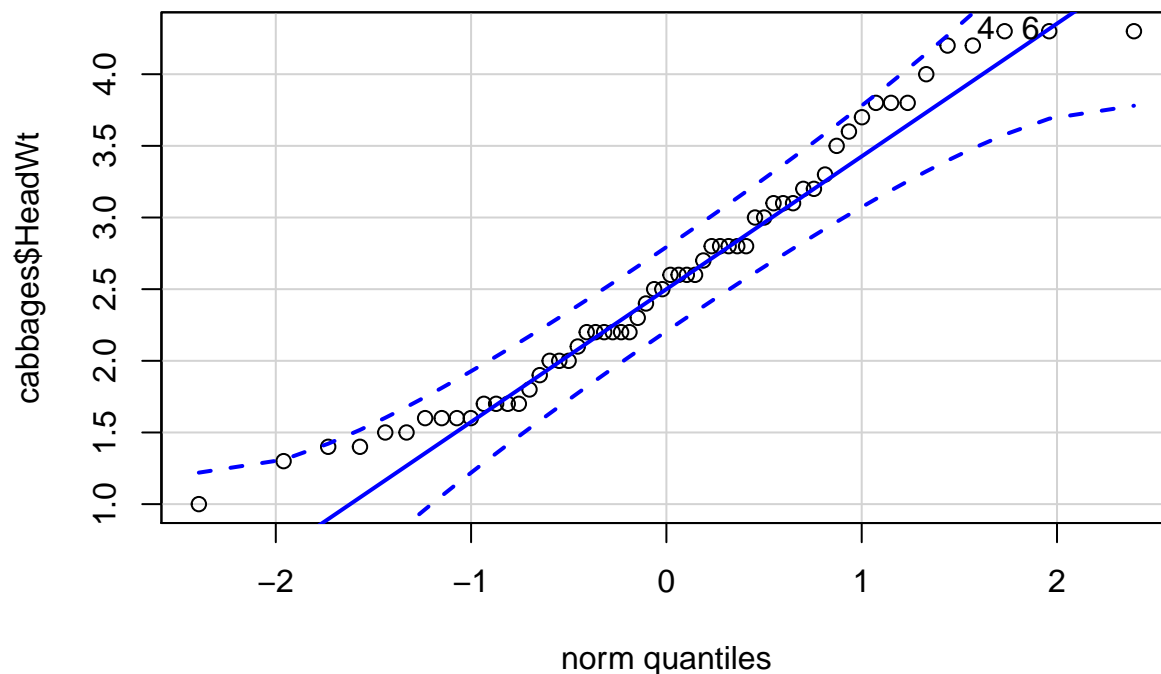
```r
qqPlot(cabbages$VitC)
```



```
## [1] 54 51
```
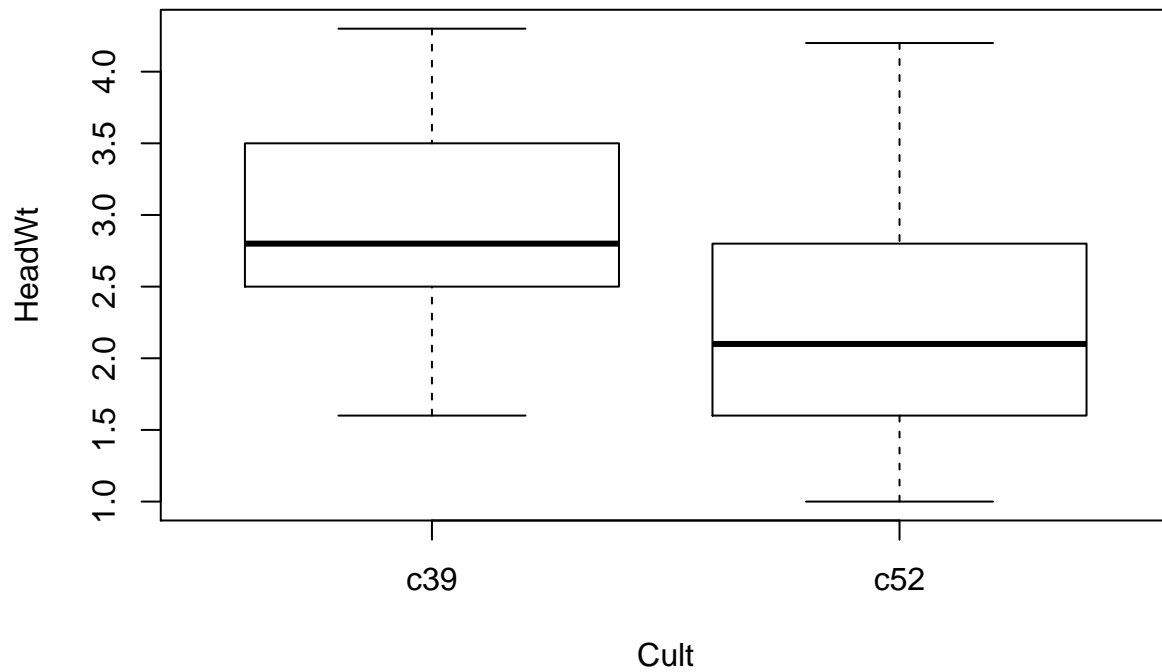
Ejercicio 7

```r
library(MASS)
library(car)
summary(whiteside)
```

```
##     Insul          Temp              Gas
##  Before:26    Min.   :-0.800    Min.   :1.300
##  After :30    1st Qu.: 3.050    1st Qu.:3.500
##               Median : 4.900    Median :3.950
##               Mean   : 4.875    Mean   :4.071
##               3rd Qu.: 7.125    3rd Qu.:4.625
##               Max.   :10.200    Max.   :7.200
```

```r
summary(cabbages)
```
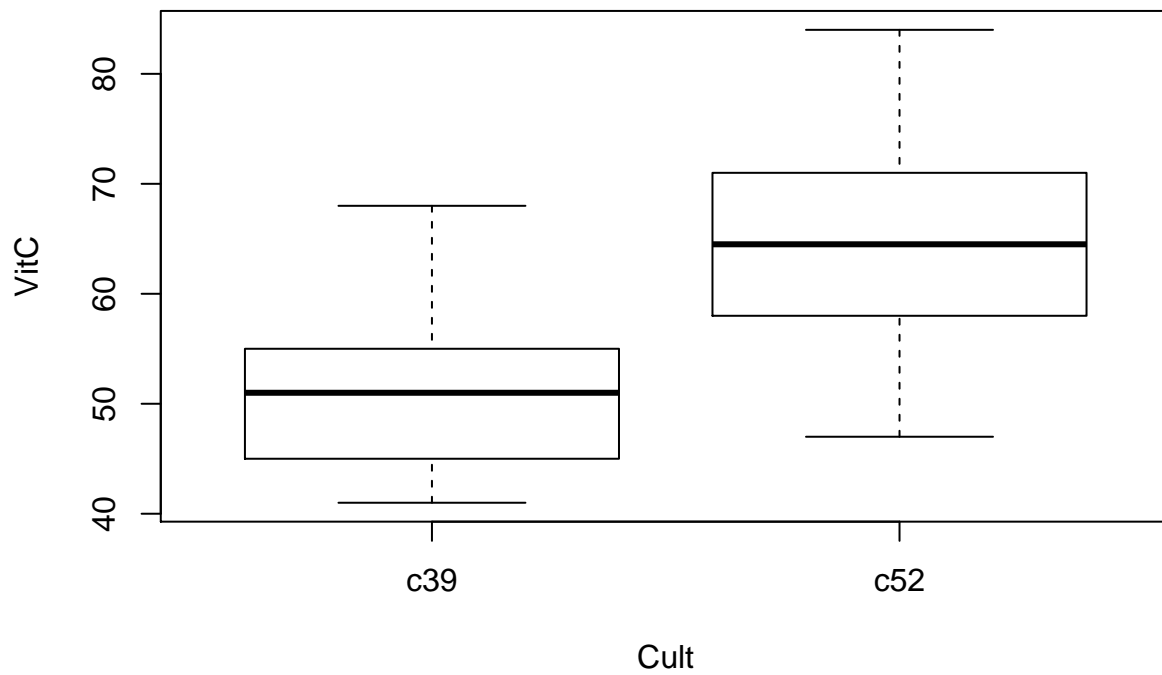
```
##   Cult      Date         HeadWt            VitC
##  c39:30    d16:20    Min.   :1.000    Min.   :41.00
##  c52:30    d20:20    1st Qu.:1.875    1st Qu.:50.75
##            d21:20    Median :2.550    Median :56.00
##                      Mean   :2.593    Mean   :57.95
##                      3rd Qu.:3.125    3rd Qu.:66.25
##                      Max.   :4.300    Max.   :84.00
```
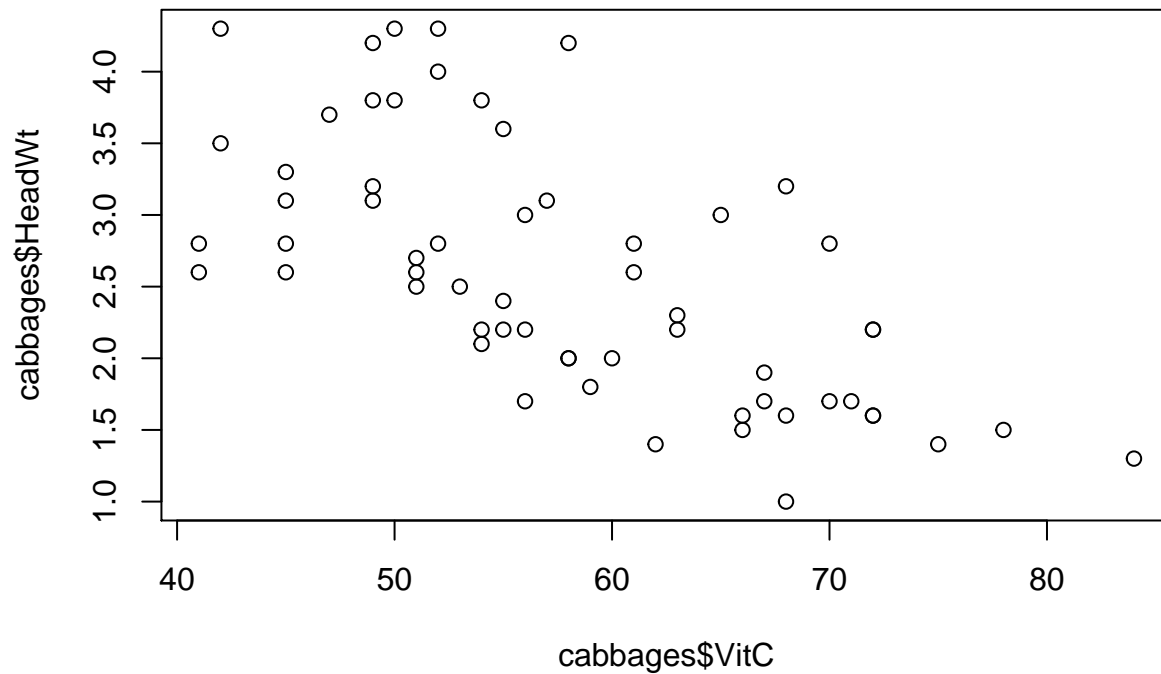
```r
boxplot( HeadWt ~ Cult, data = cabbages)
```

```r
boxplot( VitC ~ Cult , data = cabbages)
```


Ejercicio 8

```r
library(MASS)
library(car)
#summary(whiteside)
#summary(cabbages)
plot(cabbages$VitC, cabbages$HeadWt)
```

Ejercicio 8

```r
library(MASS)
library(car)
summary(cabbages)
```

```
##    Cult      Date        HeadWt          VitC
##  c39:30    d16:20   Min.   :1.000   Min.   :41.00
##  c52:30    d20:20   1st Qu.:1.875   1st Qu.:50.75
##            d21:20   Median :2.550   Median :56.00
##                     Mean   :2.593   Mean   :57.95
##                     3rd Qu.:3.125   3rd Qu.:66.25
##                     Max.   :4.300   Max.   :84.00
```

```r
cor(cabbages$HeadWt, cabbages$VitC)
```

```
## [1] -0.659892
```