Εργαστηριακή Άσκηση 2

Θέμα: Περιγραφική Στατιστική

1.

```
> Height<-c(3.33, 5.87, 6.31, 1.98, 4.86, 2.65, 2.78, 2.21, 0.45, 1.51, 0.56, 3.68, 2.16,
3.15, 0.84, 3.95, 4.16, 2.99, 2.15, 6.78, 2.84, 4.23, 2.89, 2.56, 2.65, 1.54, 0.98, 0.87)

> Position<-c(1,2,2,2,1,2,1,1,2,1,2,1,1,1,1,1,1,1,2,2,1,2,1,1,2,2,2,2)

> summary(Height)
   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
  0.450   1.870   2.715   2.890   3.748   6.780
> sd(Height)
[1] 1.662966

> iq<-3.748-1.870

> iq
[1] 1.878
```

Ισοδύναμα:

```
> iq<-quantile(Height,0.75)-quantile(Height,0.25)


> var(Height)
[1] 2.765455
> n<-lenght(Height)
> (n-1)*var(Height)/n
[1] 2.666689
```

2.

```
> hist(Height)
> hist(Height, freq=F)

>hist(Height, probability=T, nclass=4)
> hist(Height, probability=T, nclass=14)
```

3.

```
> boxplot(Height~Position, names=c('North Greece','South Greece'), main="Height
(meters) of a particular plant according to its Georgaphical Position")
```

Ισοδύναμα:

```
> Height1<-Height[Position==1]
> Height2<-Height[Position==2]
> boxplot(Height1,Height2,names=c('North Greece','South Greece'), main="Height
(meters) of a particular plant according to its Georgaphical Position")
```

4.

```
> plot(Height, type='n')
> text(Height, label=Position)
> title("Height (meters) of a particular plant according to its Georgaphical Position")
> legend(20,6, legend=c("1=North Greece", "2=South Greece"))
```

5.

```
> by(Height, Position, median)
INDICES: 1
[1] 2.89
------------------------------------------------------------
INDICES: 2
[1] 2.15
```

Ισοδύναμα:

```
> median(Height1)
> median(Height2)
```

6.

```
> cat_height<-rep(1, 28)
> cat_height[Height>=1 & Height<=3]<-2
> cat_height[Height>3]<-3
> cat_height<-factor(cat_height)
> levels(cat_height)<-c("Short", "Medium", "Tall")
> table(cat_height)
> prop.table(table(cat_height))
> pie(table(cat_height))
> title(main="Pie-chart of the Height of a particular plant")
```

7.

```
> mytable<-table(cat_height, Position)
> prop.table(mytable)
> prop.table(mytable, 1)
> prop.table(mytable, 2)
```