Solutions to Exercises from Chapter 11

1.1-. `table(x)/length(x)`.

1.2-. `table(x,y)`.

1.3-. `margin.table()`.

1.4-. `prop.table()`.

1.5-. `names(which.max(table(mytable)))`.

1.6-. `diff(range(x))`.

1.7-. `IQR(x)`.

1.8-. `var(x)*(length(x)-1)/length(x)`.

1.9-. `sqrt(var(x)*(length(x)-1)/length(x))/mean(x)`.

1.10-. `mean(abs(x-mean(x)))`.

1.11-. Package `moments`.moments

1.12-. First, we need to compute the χ^2 statistic using:

```
chi2 <- summary(table(mytable))$statistic
```

Cramér's Φ^2 is obtained by `chi2/N`.

1.13-. Here is the code to compute the correlation ratio $\eta^2_{Y|X}$:

```
eta2 <- function(x,gp) {
 means <- tapply(x,gp,mean)
 frequency <- tapply(x,gp,length)
 varinter <- (sum(frequency * (means - mean(x))^2))
 vartot <- (var(x) * (length(x) - 1))
 res <- varinter/vartot
 return(res)
}
```

1.14-. Function `barplot()` can be used to obtain a Pareto diagram.

1.15-. A stacked bar chart can be obtained using the function `barplot()` with an object of type `matrix` as first argument.

1.16-. Function `pie()` can be used to obtain a pie chart.

1.17-. Function `boxplot()` can be used to obtain a box plot.

1.18-. Function `hist()` is used to draw a histogram.