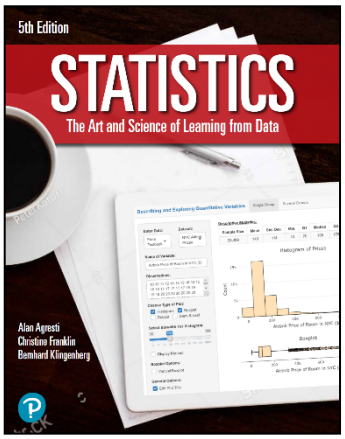

R Code for Examples in the book
"Statistics: The Art and Science of Learning from Data"
by Agresti, Franklin and Klingenberg, 5th edition

Chapter 11

Example 9: Religiosity and Gender – Standardized Residuals

Reading in data

```
mytable <- as.table(matrix(c(145, 359, 268, 275, 227, 514, 305, 235),
                           nrow = 2, byrow = TRUE,
                           dimnames = list(gender = c('female', 'male'),
                                           religiosity = c('very',
                                                           'mod.',
                                                           'slightly',
                                                           'not'))))
mytable # viewing the table
```

```
##         religiosity
## gender   very mod. slightly not
##   female  145  359      268 275
##   male    227  514      305 235
```

To perform a chi-squared test on the data

```
mytest <- chisq.test(mytable)
```

To view the expected cell counts of the data

```
round(mytest$expected, 1)
```

```
##         religiosity
## gender    very  mod. slightly   not
##   female 167.3 392.6    257.7 229.4
##   male   204.7 480.4    315.3 280.6
```

To view residuals (observed - expected)

```
round(mytable - mytest$expected, 1)
```

```
##         religiosity
## gender    very  mod. slightly   not
##   female -22.3 -33.6     10.3  45.6
##   male    22.3  33.6    -10.3 -45.6
```

To view the standardized residuals

```
round(mytest$stdres, 1)
```

```
##         religiosity
## gender   very mod. slightly  not
##   female -2.5 -2.9      1.0  4.6
##   male    2.5  2.9     -1.0 -4.6
```