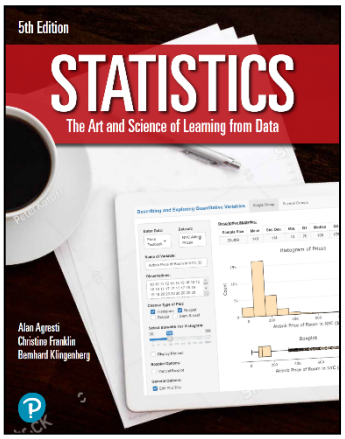

R Code for Examples in the book
"Statistics: The Art and Science of Learning from Data"
by Agresti, Franklin and Klingenberg, 5th edition

Chapter 9

Example 6: Car Stopping – Significance Test About A Population Proportion

To make a one-sided significance test about a population proportion, you can use

```
prop.test(x = 76, n = 126, p = 0.75, alternative = 'less',
          conf.level = 0.95, correct = FALSE)

##
##  1-sample proportions test without continuity correction
##
## data:  76 out of 126, null probability 0.75
## X-squared = 14.487, df = 1, p-value = 7.057e-05
## alternative hypothesis: true p is less than 0.75
## 95 percent confidence interval:
##  0.0000000 0.6719722
## sample estimates:
##         p
## 0.6031746
```

Alternatively, you can also do the manual computation

```
x <- 76
n <- 126
phat <- x / n
p_0 <- 0.75 # the value that p takes in the null hypothesis
se_0 <- sqrt(p_0 * (1 - p_0) / n)
z <- (phat - p_0) / se_0
```

To compute the p value for a one-sided alternative hypothesis

```
pnorm(z)

## [1] 7.05736e-05
```