**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 4: Opinion on Fracking – Two-Sided Significance Tests**

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

prop.test(x = 637, n = 1353, p = 0.5, alternative = 'two.sided',   
 conf.level = 0.95, correct = FALSE)

##   
## 1-sample proportions test without continuity correction  
##   
## data: 637 out of 1353, null probability 0.5  
## X-squared = 4.6127, df = 1, p-value = 0.03174  
## alternative hypothesis: true p is not equal to 0.5  
## 95 percent confidence interval:  
## 0.4443291 0.4974474  
## sample estimates:  
## p   
## 0.4708056

## Alternatively, you can also do the manual computation

x <- 637  
n <- 1353  
phat <- x / n  
p\_0 <- 0.5 # 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 two-sided alternative hypothesis

2 \* pnorm(z)

## [1] 0.0317358