



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

Chapter 13

Example 5: Female Athletes' Weight – Overall F Test for Predictors

Reading in data

```
data <-  
read.csv(file='https://raw.githubusercontent.com/artofstat/data/master/Chapter13/college_female_athletes.csv')
```

Fitting in multiple regression models

```
lin.reg <- lm(TBW ~ HGT + BF + AGE, data = data)
```

To view the F -statistic, you can use the summary of the regression model; you will find the overall F -statistic at the last line of the summary

```
summary(lin.reg)  
  
##  
## Call:  
## lm(formula = TBW ~ HGT + BF + AGE, data = data)  
##  
## Residuals:  
##      Min       1Q   Median       3Q      Max   
## -20.724  -5.439   1.096   5.660  32.865   
##  
## Coefficients:  
##              Estimate Std. Error t value Pr(>|t|)      
## (Intercept) -97.6938    28.7852  -3.394  0.00123 **    
## HGT          3.4285     0.3679   9.319 2.88e-13 ***   
## BF          136.4265    31.2553   4.365 5.10e-05 ***   
## AGE         -0.9601     0.6483  -1.481 0.14384      
## ---  
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1  
##  
## Residual standard error: 10.11 on 60 degrees of freedom  
## Multiple R-squared:  0.6693, Adjusted R-squared:  0.6528   
## F-statistic: 40.48 on 3 and 60 DF, p-value: 1.977e-14
```