



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

Chapter 14

Example 3: Telephone Holding Times – One-Way ANOVA

Reading in data

```
y <- c(5, 1, 11, 2, 8, 0, 1, 4, 6, 3, 13, 9, 8, 15, 7)
group <- rep(c('A', 'M', 'C'), times = c(5, 5, 5))
```

To find value of F test statistic that would have a P-value of < 0.05

```
qf(0.95, df1 = 2, df2 = 12)
```

```
## [1] 3.885294
```

To get the ANOVA table

```
myAnova <- aov(y ~ group)
summary(myAnova)
```

```
##              Df Sum Sq Mean Sq F value Pr(>F)
## group          2   149.2    74.6   6.431 0.0126 *
## Residuals     12   139.2    11.6
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Given the F statistic, you can also compute the P-value using the pf() function

```
pf(6.43, df1 = 2, df2 = 12, lower.tail = FALSE)
```

```
## [1] 0.01264971
```