Spring 2025 ..... Score _____ / 20

Homework #3

[Chaemin Lee, lab2 Anthony]

---

highlight and click "Run" the line below before knitting

install.packages("rmarkdown")

```
# set seed replace 12345678 with your student ID
seed = 12345678
```

```
# loads in data for the full population
pop<-read.csv("HW3.csv")
names(pop) <- c("X", "Y")
```

```
# sets the seed for the random number generator
set.seed(seed+25)
```

```
# assigns a "random" sample of 12 from the population to 'data'
data<-pop[sample(nrow(pop), 12, replace=FALSE),]


# use this data
data
```

```
##      X  Y
## 954  9  8
## 903 10  7
## 965  5  5
## 161  8  7
## 717 12  8
## 656  8  7
## 255 10  7
## 127  7  6
## 754  9  8
## 441  8 10
## 810  8  6
## 276  7  6
```

```
# regression
model <- lm(Y ~ X, data=data)
summary(model)
```

```
##
## Call:
## lm(formula = Y ~ X, data = data)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -0.9212 -0.6993 -0.5048  0.2315  3.0788
```

```
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   3.8091     1.6969   2.245   0.0486 *
## X             0.3890     0.1976   1.969   0.0773 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 1.168 on 10 degrees of freedom
## Multiple R-squared:  0.2793, Adjusted R-squared:  0.2073
## F-statistic: 3.876 on 1 and 10 DF,  p-value: 0.0773
```

```r
# ANOVA
anova<-anova(model)
anova
```

```
## Analysis of Variance Table
##
## Response: Y
##           Df  Sum Sq Mean Sq F value Pr(>F)
## X          1  5.2842  5.2842  3.8762 0.0773 .
## Residuals 10 13.6325  1.3632
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```