# ENTMLGY 6702 Entomological Techniques and Data Analysis
## Intro to R

### Not submitted for grading

1. Create a vector called `my_vector` with integer values from 1 to 10.

2. Use `log()` to log-transform `my_vector` and store (using `<-`) the transformed values as `my_vector_ln`. You should complete this step entirely in R - I am not asking you to store or save a new file. Note that in R, `log()` is the natural logarithm ($log_e$) and not $log_{10}$.

3. Create a vector called `my_vector_new` by adding 2 to all values of `my_vector_ln`.

4. Create a data frame called `my_df` using the following code.

   ```
   my_df <- data.frame(variable1 = my_vector, variable2 = my_vector_new)
   ```

5. Run the `summary()` command on your data frame. Your output should look exactly the same as the below summary.

   ```
   ##     variable1       variable2
   ##  Min.   : 1.00   Min.   :2.000
   ##  1st Qu.: 3.25   1st Qu.:3.171
   ##  Median : 5.50   Median :3.701
   ##  Mean   : 5.50   Mean   :3.510
   ##  3rd Qu.: 7.75   3rd Qu.:4.046
   ##  Max.   :10.00   Max.   :4.303
   ```

6. Use `plot()` to create a scatterplot of `variable2` as a function of `variable1` from the `my_df` data frame. Hint: `plot(...~..., data=...)` or `?plot()`

   I will use this phrasing - "Y as a function of X" - a lot this semester. So, in this case, `variable2` would be your response variable and displayed on the y-axis and `variable1` would be your predictor and displayed on the x-axis.

7. Reproduce the graph from the previous step, but change the x-axis and y-axis titles to, respectively, "My X axis" and "My Y axis".

8. When working with data frames in R, we can refer to specific columns using a `$`. Below is an example of how to calculate a mean in R. Calculate the standard deviation for `variable2` in `my_df`.

   ```
   my_df$variable1
   ```

   ```
   ## [1]  1  2  3  4  5  6  7  8  9 10
   ```

   ```
   mean(my_df$variable1)
   ```

   ```
   ## [1] 5.5
   ```