Delia Mahoney
Week 10 Reading Q's
11/3/2021
*worked solo

1. We might want the number of parameters to be a penalized because as the number of parameters increases, so does the complexity of the model, which makes it difficult to work with. Also, as the number of parameters increase, it becomes too difficult to interpret the meaning of each as they are transformed in different mathematical operations.

2. A regression model serves to mathematically explain the relationship between two variables, one dependent, and the other independent. When expressed in the simple linear format ($y_i=\alpha+\beta_1 x_i+\epsilon$), the term "β" standards for the slop of the line. This means that for every single unit increase in the independent variable (x), the value of the dependent variable (y) is expected to increase by the value of the slope (β).

   In a hypothetical example we are measuring the presence of fish (y), based on the size of lakes (x) measured in cubic meters. In this case, the value of β in the linear regression equation would tell us how many more fish we would expect to see for every additional cubic meter of lake volume.

3. Low water level is the base case.
4. 2.4 grams, this value is given to us in the table as low water is the base case
5. 3.7, this is equal to 2.4 + (1x1.3), which is the intercept plus the additional water unit for medium
6. A and C can both be answered, A with the coefficients produced, and C with a similar calculation to above. B cannot be answered because the table does not tell us about significance overall.