Reading Questions for "The Analysis of Biological Data", Section 17.2–17.3 + RStudio Supplement

[Submit your responses, by 1 am Mon., Apr. 29, using the webform below.]

1. In this chapter we encounter several different "confidence intervals". The names for these given in the text are "confidence interval for \( \beta \)“, confidence bands, and prediction intervals. Explain the difference in these latter two. If, for instance, we focus on lions whose noses are 50% black. What would a prediction interval at \( X = .5 \) be aimed at doing? What about a confidence band at that same level (i.e., \( X = .5 \))?

2. (There is no question here to which you must respond.) The data for Example 17.3 is found in the abd dataset Chickadees. Do the following commands

   ```r
   chickReg = lm(dees ~ mass, data=Chickadees)
   summary(chickReg)
   ```

   As you read through Example 17.1, identify which results are reported in your RStudio output above, and where it is reported.

3. What does \( r^2 \) (or \( R^2 \)) tell you about the results of regression?

   If you had the \( r^2 \) value and the value of \( b \) (the estimate of true slope \( \beta \) coming from data), how might you find the corresponding correlation coefficient for the data?

4. Identify one item (a concept, a step in an example, a statement, etc.) from this reading assignment you found difficult or confusing.