Reading Questions for “The Analysis of Biological Data”, Section 17.1 + RStudio Supplement

[Submit your responses, by 1 am Fri., Apr. 26, using the webform below.]

1. Which of the following seem to go hand-in-hand with linear regression?
   - grouped bar plot
   - histogram
   - correlation
   - grouped histogram
   - side-by-side boxplot
   - quantile-quantile plot
   - contingency table
   - scatterplot
   - goodness-of-fit test

   What is the setting that underlies each of these (i.e., linear regression and the others that you chose in the list)?

2. We use data to compute the slope $b$ and $y$-intercept $a$ for a least-squares regression line

$$\hat{y} = a + bx.$$ 

There are lots of formulas given in the text/supplemental notes. What are the simplest formulas provided for $a$ and $b$? What would be the correct order to compute them, $a$ first and then $b$, or vice-versa?

The data for Example 17.1 from the text is found in the dataset LionNoses. Give commands, in sequence, that one could use to determine $a$ and $b$.

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