**BIO 206: Biostatistics Spring 2021**

Assignment 4: Questions from Chapter 3 “Describing Data”

(58 pts)

**Due Tues, Jan 19**

* Please type.
* Remember to put your name and the number or title of the assignment on the first page and any pages that you attach.
* Make sure to answer every question within a problem, such as “Why?”. Label the units on the answers.
* For practice problems, please write an answer in your own words before checking your answer against the solutions in the back of the book. Then, compare the solution to your answer. If your answer wasn't correct, don't change it--write about how the solution in the book differed from your answer and why it's correct. In other words, show evidence that you are thinking independently and learning. In this way, you can get full credit even if you originally didn't have the correct answer.
* See assignment 3 for info on alternative methods of graphing. You can find an example of format of a graph with figure legend on a slide in D2L>Copies of slides and notes from lecture>Measures of location mean and median with graph design Spring 2021> 5th slide. On graphs, include:
  + Your name
  + The number to the problem
  + Include labels on the axes.
  + Include units. Examples of units: cm or sec.
  + Above or below the graph, write a figure legend that describes what data are in the graph. Include the sample size in the legend. See Endres and Lohmann (2012) fig 2 and fig 3 for examples. The article is in the folder “Assignments”. Reading the whole article won’t be part of this course.
  + At the end of the figure legend, write in parentheses the names of the authors and year published—you don't want to represent the data as your own. Example of citation: (data from Cratsley and Lewis (2003)). The authors for the data are listed in problems.
* Assignments turned in after the beginning of class are late, except for students with excused absences.

Practice Problems

1 a through f (9 pt). Create a table and do each step by hand in successive columns, in the same way that we did the class activity. You will need a calculator with a x2 button. Problem 1d is asking for the sum of squared deviations of each datapoint from the mean, not just the sum of squares.

3a (1pt)

3b (2 pt)

3c (2 pt)

4 a through e (1 pt each; 5 pt total)

4 f through i (2 pt each; 8 pt total)

5 all (1 pt each; 5 pt total)

Assignment Problems

18a (2 pt)

19 all (3 pt. each; 12 pt total) Hint: these plots are similar to fig 3.3-3, just turned sideways and flipped around.

21 ( 2 pt)

24 a through c (1 pt each; 3 pt total)

24 d (2 pt)

29 (5 pt) Frequency doesn't count as a variable.

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At the end of your paper, please write “Number of hours I spent on this homework:” and add an estimate. Don’t include time that you spent reading the chapter. This number won’t affect your grade.