Show **all** of your work on this assignment and answer each question fully in the given context. Each individual part is worth 5 points and partial credit is awarded for close answers. Regardless of the total number of points on this homework, it will have the same weight as all other homeworks in terms of its impact on course grade. So, if a specific homework has 50 points and you lose 5, then your grade on that homework will be 45/50=90%. If there are 10 points on a homework and you lose 5, then your grade on that homework will be 5/10=50%. The average of those two homeworks would be $(90 + 50)/2 = 70$.

You will want to understand Exercise 1 from Section 2.1 before attempting the following questions. Your answers should be written in complete sentences. It is possible that a drawing or table may help make your thoughts more concrete or illustrate a concept that would be difficult to describe in words alone - if so I encourage you to use one.

Please staple your assignment!

- **Problem1: Chapter 2, Section 3, Exercise 1 (page 47)**

- **Problem2: Chapter 2, Section 3, Exercise 5 (page 47)**

- **Problem3: Chapter 2, End of chapter exercise, Exercise 7 (page 65)**

- **Problem4: Chapter 2, End of chapter exercise, Exercise 11 (page 65)**

- **Problem5: Chapter 3, Section 2, Exercise 1 (page 92)**

- **Problem6: JMP Assignment.**

  Computing is one of the most important parts of modern data analysis. A large part of data science simply wouldn't exist without the tools developed by scientists working at the intersections of computer science, mathematics, and statistics. Because of that, there will inevitably be parts of this course where a statistical computing tools are needed. SAS and R are the two main languages used by statisticians, though Python, Julia, F#, C++ and others are also common. SAS has a software called JMP ("Jump") that makes doing statistical analyses simpler - it is more powerful than Excel or your calculator but requires little in the sense of coding making the learning curve much lower. We will be using it this semester. There are labs in Snedecor Hall with the software pre-installed, but it is free for students and I encourage you to download a copy for yourself using the link below.

  Download: https://www.stat.iastate.edu/statistical-software

  In this problem, we will work through the tutorial found at http://web.utk.edu/∼cwiek/201Tutorials/. Download and install JMP or find a computer with it already installed. Once you have done this, complete the following sections from the the tutorial linked above. For each part, print and include the table or graph produced. (Note: You can save the plots/tables and combine them in a single document).

    1. Creating a JMP data table

2. Bar Chart

3. Pie Chart

4. Mosaic Plot

5. Histogram and Box Plot

6. Stem and Leaf Plot

7. Side-by-Side Box Plots

8. Calculating Summary Statistics of Quantitative Data