Summer Work for Students Entering Statistics CP
"How to Lie with Statistics"

Read the short book <u>How to Lie with Statistics</u> by Darrell Huff. This 1954 book is old but is a classic You can purchase this paperback book from Amazon for as little as $4. You can purchase the old or new edition. Both are the same. It is fine to buy a used book.

As you read the book, take notes on each chapter focusing on the questions below. Then write a summary of the book highlighting those questions. The summary should be typed, double-spaced with a 12pt font. A minimum of 3 pages and a maximum of 5 pages.

Chapter 1. "The Sample with the Built-in Bias"

1. **What is a sample?**
2. **Give an example of bias from the book.**
3. **What is a random sample?**
4. **What is a stratified random sample?**
5. **Give an example of a stratified random sample from the book**

Chapter 2. "The Well-Chosen Average"

Define the following terms

- **Skewed**

- **Median**

- **Mean**

- **Mode**

- **Average**

Chapter 3. "The Little Figures That Are Not There"

    1. Why should you be suspicious of a small sample?

    2. Average alone is misleading. Why?

    3. What is a better description than average?4. Why is it important to label all graphs?

Chapter 4. "Much Ado about Practically Nothing"

    1. What is probable error?

    2. What does probability error have to do with Linda's and Peter's IQs?

    3. Explain how the advertisement for Old Gold described on page 59 is dishonest.

Chapter 5. "The Gee-Whiz Graph"

    1. What is a misleading graph?

    2. Why is it important to label the axis of every graph you make in Statistics?

Chapter 6. "The One-Dimensional Picture"

    1. Why are picture graphs used?

    2. How can they be deceptive?

Chapter 7. "The Semiattached Figure"

    1. What is a semiattached figure? Give and example from the book..

    2. Why should you watch for semiattached figures?

    3. How do before-and-after pictures use semiattached figures?

Chapter 8. "Post Hoc Rides Again"

    1. Can you say that "A" causes "B" just because "B" follows "A"?

    2. Name another reason why "B" follows "A" if "A" does not cause "B".

    3. Why should you not take a correlation beyond the data? (see p 91)

Chapter 9. "How to Statisticulate"

1. How can maps be used to deceive?

2. If a number has lots of places after the decimal, is it more accurate? Explain

3. If your pay is decreased by 50% and then increased by 50% is it back to what
    it was to
    begin with? Explain

4.   How are Percentiles a way to Statisticulate?

Chapter 10. "How to Talk Back to a Statistic"

1. What are the 5 questions you should ask when looking at a statistic?

2. What was the problem with the "Journal of Commerce" survey?

3. Give an example of how the subject can be changed.

4. What did Mark Twain say about the nonsense side of extrapolation in
    Life on the Mississippi?