AP Statistics Summer Reading

Read the short book <u>How to Lie with Statistics</u> by Darrell Huff. This 1954 book is old but is a classic (now in its 50th printing). You can download the book at https://archive.org/details/HowToLieWithStatistics.

Write brief answers to the questions found on these pages. This book will be discussed at the beginning of the school year and students will take a quiz over the book the first week of school. Any notes you take can be used on the quiz.

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

1. What is a sample?

2. Give and 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"
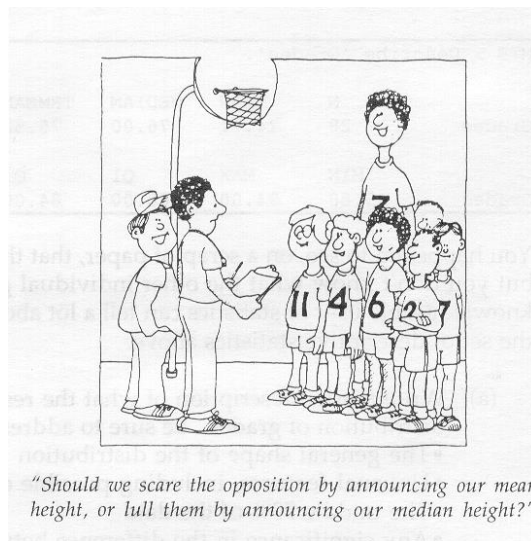
1. Define the following terms.

    Skewed

    Mean

    Median

    Mode

2. Give a brief explanation of the picture.

"Should we scare the opposition by announcing our mean height, or lull them by announcing our median height?"

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?