

## AP STATISTICS SUMMER READING

Mr. Zack

Read the short book **How to Lie with Statistics** by Darrell Huff. This book is available from Amazon for between \$10.19 (new) and \$2.99 (used), as well as at local book stores. This book is old, but classic. First published in 1954, this slim (142 page) volume has become the most widely read statistics book in history. It's ironic that the most widely read statistics book was authored by someone with no formal training in statistics; however, there is also some logic to it as well. Mr. Huff was excellent at communicating through the written word, and he was committed to doing things on his own. Because of its age some terminology and values may seem dated. Please remember that a dollar (\$1.00) in 1954 could purchase the equivalent of eight dollars and sixty-four cents (\$8.64) today! (*source: CPI Inflation Calculator, Bureau of Labor Statistics*)

Write brief answers (Typed, you must retype each question before you answer) to the questions found on the following pages. Each question is worth 3 points: 1 point for completion, 1 point for correctness, and 1 point for depth.

This is a **MANDATORY** Assignment and will count towards your grade for the first grading period.

Hand in your answers the first day of class. Late work will be assessed a 10% penalty per day and the assignment will **not** be accepted after the 1st week.

# AP Statistics Summer Reading

Answer these questions from the book How to Lie with Statistics by Darrell Huff

## 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"

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 an 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*?

