Name: _____

Summer Assignment AP Statistics
2019 - 2020

Directions: The following assignment is to be completed and turned in on the FIRST day of class. This work includes reading from Chapters 1 - 3 in your textbook along with completing an online activity. In total, it will be worth <u>40 points</u>. A 20% per day penalty will be deducted for lateness.

<u>To do:</u>

❏ Watch the TED Talk - "Why you should love statistics"
https://www.ted.com/talks/alan_smith_why_we_re_so_bad_at_statistics

    ❏ What did you find most interesting about the video?

    ❏ Which topic(s) covered in the video would you like to explore further?

    ❏ Take the quiz for the United States:
https://www.theguardian.com/world/ng-interactive/2015/dec/02/how-well-do-you-really-know-your-country-take-our-quiz

        ❏ Which statistic were you the closest on?

        ❏ Which statistic were you the furthest away from?

        ❏ Which statistic(s) surprised you the most?

❏ Read chapters 1 - 3 and complete the accompanying reading guide for each chapter.
❏ Complete "Just Checking" problems from each chapter
❏ Complete the assigned problems from the book, showing all work.

    Not required, but if you're interested, here is further reading relating to the video:

https://www.ipsos.com/ipsos-mori/en-uk/perceptions-are-not-reality-what-world-gets-wrong

Chapter 1: Stats Starts Here
Chapter 2: Data

Key Vocabulary:

- Statistics
- data, datum
- variation
- individual
- respondent

- subject
- participant
- experimental unit
- observation
- variable

- categorical
- quantitative

Calculator Skills:

- enter data in a list
- change a datum

- delete a datum
- name a new list
- clear a list
- delete a list

- recreate a list
- copy a list

1. Name three things you learned about *Statistics* in Chapter 1.

   -
   -
   -

2. The authors claim that this book is very different from a typical mathematics textbook. Would you agree or disagree, based on what you read in Chapter 1? Explain.

3. According to the authors, what are the "three simple steps to doing *Statistics* right?"

4. What do the authors refer to as the "W's of data?"

5. Why must data be in context (the W's)?

6. Explain the difference between a *categorical variable* and a *quantitative variable*. Give an example of each.

Chapter 2: "Just Checking"

1. Who:

   What:

   When:

   Where:

   Why:

   How:

2.

Variable	Type	Units

Problems from Chapter 2:
On a separate piece of paper, complete:
#6, 12, 16, and 26

Chapter 3: Displaying and Describing Categorical Data

Key Vocabulary:

- frequency table
- relative frequency table
- distribution
- bar chart
- pie chart

- contingency table
- marginal distribution
- conditional distribution
- independent
- segmented bar chart

- Simpson's Paradox

1. According to the authors, what are the three rules of data analysis?

2. Explain the difference between a frequency table and a relative frequency table.

3. When is it appropriate to use a bar chart?

4. When is it appropriate to use a pie chart?

5. When is it appropriate to use a contingency table?

6. What does a marginal distribution show?

7. When is it appropriate to look at a conditional distribution?

8. What does it mean for two variables to be independent?

9. How does a segmented bar chart compare to a pie chart?

10. Explain what is meant by Simpson's Paradox.

Chapter 3: "Just Checking"

1.

2.

3.

4.

5.

6.

7.

Problems from Chapter 3:

On a separate piece of paper, complete:

#5, 7, 9, 11 (create a pie chart), 13, 14, 17, 19, 22, 30, and 38