AP Statistics Summer 2018 Homework Packet

<u>Teacher</u>
Meaghan Simms
2018-2019 will be my 9th year teaching, all of which have been at Lakeland High School. This will be my second year teaching AP Statistics and Honors Probability with Statistical Applications.

<u>Contact</u>
My email is meaghan.simms@polk-fl.net and I check it throughout the summer. Please contact me if you have any questions. Also, my website is a good resource. Favorite it.
https://mathisfunsimms.wordpress.com

<u>Textbook</u>
-Stats: Modeling the World (AP Edition) 3rd Edition by Bock, Velleman, De Veaux

<u>Online Access</u>
-Visit http://phschool.com/ and enter web code "aze-0641"

<u>Assignment</u>
-Read *Chapter 1: Stats Starts Here* and *Chapter 2: Data* (pages 2-16)
-Fill out the attached Chapters 1-2 Reading Guide… these guides will be given each chapter and are good for picking out the important information
-Answer the attached questions (they are taken from the Chapter 2 Exercises 1, 3, 7, 11 ,13, 14, 22, 23)

<u>Prep Suggestions</u>
-Try answering the "Just Checking" question on p. 13; the answers are found at the end of the chapter exercises… these boxes are found throughout the textbook and are good practice while reading each chapter
-Practice working with the graphing calculator by going through the TI Tips on pages 14-15

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.

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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: Data

1) Voters. A February 2007 Gallup Poll question asked, "In politics, as of today, do you consider yourself a Republican, a Democrat, or an Independent?" The possible responses were "Democrat", "Republican", "Other", and "No Response." What kind of variable is the response?

3) Medicine. A pharmaceutical company conducts an experiment in which a subject takes 100 mg of a substance orally. The researchers measure how many minutes it takes for half of the substance to exit the bloodstream. What kind of variable is the company measuring?

Exercises 7 and 11

For each description of data, identify Who and What were investigated and the population of interest.

7) Bicycle Safety. Ian Walker, a psychologist at the University of Bath, wondered whether drivers treat bicycle riders differently when they wear helmets. He rigged his bicycle with an ultrasonic sensor that could measure how close each car was that passed him. He then rode on alternating days with and without a helmet. Out of 2500 cars passing him, he found that when he wore his helmet, motorists passed 3.35 inches closer to him, on average, than when his head was bare. [*NY Times*, Dec. 10, 2006]

11) Fitness. Are physically fit people less likely to die of cancer? An article in the May 2002 issue of *Medicine and Science in Sports and Exercise* reported results of a study that followed 25,892 men aged 20 to 87 for 10 years. The most physically fit men had a 55% lower risk of death from cancer than the least fit group.

Exercises 13, 14, 22, 23

For each description of data, identify the W's, name the variables, specify for each variable whether its use indicates categorical or quantitative data. Identify the units (or note not specified) for the quantitative variables.

13) Weighing bears. Because of the difficulty of weighing a bear in the woods, researchers caught and measured 54 bears, recording their weight, neck size, length, and sex. They hoped to find a way to estimate weight from the other, more easily determined quantities.

14) Schools. The State Education Department requires local school districts to keep these records on all students: age, race or ethnicity, days absent, current grade level, standard tests scores for reading/math, and any disabilities/special educational needs.

22) Fuel economy. The Environmental Protection Agency (EPA) tracks fuel economy of automobiles based on information from the manufacturers (Ford, Toyota, etc.). Among the data the agency collects are the manufacturer, vehicle type (car, SUV, etc.), weight, horsepower, and gas mileage (mpg) for city and highway driving.

23) Refrigerators. In 2006, *Consumer Reports* published an article evaluating refrigerators. It listed 41 models, giving the brand, cost, size (cu ft), type (such as top freezer), estimated annual energy cost, an overall rating (good, excellent, etc.), and the repair history for that brand (percentage requiring repairs over the past 5 years).