Name _____   Date _____

Elementary Statistics   Period _____

Chapter 1 Review: Introduction to Statistics

1. The numbers of the current players for the Chicago Bulls basketball team are 1, 2, 3, 5, 6, 9, 11, 13, 16, 20, 22, 26, 32, and 40. Does it make sense to calculate the average (mean) of these numbers?

2. Which of the following best describes the level of measurement of the data listed in Exercise 1: nominal, ordinal, interval, or ratio?

Use the following data set of earthquake depths (km) to answer questions 3-6:

6.6	2.2	18.5	7.0	13.7	5.4	5.3	5.9	4.7	14.5
2.0	14.8	8.1	18.6	4.5	17.7	15.9	15.1	8.6	5.2
15.3	5.6	10.0	8.2	8.3	9.9	13.7	8.5	8.2	7.9
17.2	6.1	13.7	5.7	6.0	17.3	4.2	14.7	15.2	3.3
3.2	9.1	8.0	18.9	14.2	5.1	5.7	16.4	10.1	6.4

3. Are these values discrete or continuous?

4. Are the depths quantitative or qualitative data?

5. Which best describes the level of measurement—nominal, ordinal, interval, or ratio?

6. True or false: If you construct a sample by selecting every sixth earthquake depth from the list, the result is a simple random sample?

7. In a recent online poll, adults were asked how often they wash their hands. Would this be considered a voluntary response sample?

8. In a recent Gallup poll, pollsters randomly selected adults and asked them whether they smoke. Among the adults who responded to the survey question, 21% said that they did smoke. Is that value of 21% an example of a statistic or an example of a parameter?

9. Is the data described in exercise 8 the result of an observational study or an experiment?

10. True or false: If data lead to a conclusion with statistical significance, then the results must also have practical significance.

11. Currently, there are 4,227 Walmart stores in the United States and another 3210 stores outside of the United States.

      a. Are the numbers of Walmart stores discrete or continuous?

      b. What is the level of measurement for the numbers of Walmart stores? (nominal, ordinal, interval, or ratio)

c. If a survey is conducted by randomly selecting 10 customers in every Walmart store, what type of sampling is used? (random, systematic, convenience, stratified, or cluster)

d. If a survey is conducted by randomly selecting 20 Walmart stores and interviewing all of the employees at the selected stores, what type of sampling is used? (random, systematic, convenience, stratified, or cluster)

e. What is wrong with surveying customer satisfaction by mailing questionnaires to 10,000 randomly selected customers?

12. In an ad for "The Club," a device used to discourage car thefts, it was stated that "The Club reduces your odds of car theft by 400%." What is wrong with this statement?

13. In a Pew Research Center poll on driving, 58% of the 1182 respondents said that they like to drive. What is the actual number of respondents who said that they like to drive?

14. In a Pew Research Center poll on driving, 331 of the 1182 respondents said that driving is a chore. What percentage of respondents said that driving is a chore?

15. Identify the type of sampling (random, systematic, convenience, stratified, cluster) used when a sample of the 1500 survey responses is obtained as described. Then determine whether the sampling scheme is likely to result in a sample that is representative of the population of all adults.

a. A complete list of all 241,472,385 adults in the United States is compiled and every 150,000th name is selected until the sample size of 1500 is reached.

b. A complete list of all 241,472,385 adults in the United States is compiled and 1500 adults are randomly selected from that list using a number generator.

c. The United States is partitioned into regions with 100 adults in each region. Then 15 of those regions are randomly selected, and all 100 people in each of those regions are surveyed.

d. The United States is partitioned into 150 regions with approximately the same number of adults in each region, then 10 people are randomly selected from each of the 150 regions.

e. A survey is mailed to 100,000 randomly selected adults, and the 1500 responses are used.