

Name: \_\_\_\_\_

## Chapter 8.1

### Introduction to Statistics

Answer each question with short explanations using complete sentences.

1. Why don't the following procedures give a random sample for the entire population of New York City?

- a. Select every third person entering a beauty salon.
- b. Select every third man entering a restaurant.
- c. Select every third person coming out of a boxing match at Madison Square Garden.

2. Consider the population of all students at Patrick Henry High School.

- a. Explain how you could get a random sample of ten students from this population.
- b. List three ways of getting samples from this population that are not random samples. Explain why each of these samples is not a random sample.

3. Marion Community College samples graduating students to determine their satisfaction with their academic programs of study. Several sampling techniques are described below. Categorize each technique as simple random sample, stratified sample, systematic sample, cluster sample, or convenience sample.

- a. Obtain a list of graduating students. Divide the students according to program areas of study and survey all students in a random selection of programs.
- b. Obtain a list of graduating students. Number these students and then use a random number table to obtain the sample.
- c. Instruct student services to survey every 50th student in an alphabetical list of graduates.
- d. Hand out a survey at graduation practice and ask students to fill it out and place it in the box at the rear of the auditorium after practice is finished.

4. A sample should be representative of the population that is under consideration. Why is this important to the outcome of the survey?

5. Give one example of a survey that you have recently seen or participated in. (There are many online surveys that you can research.) What sampling technique was used? Do you believe the results to be biased? Why or why not?

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## Chapter 8.2

### Reading and Interpreting Graphical Information

1. Maria's family made a budget of the monthly family income.

House payment \$1020  
Electricity/water/sewer \$160  
Car payment and expenses \$400  
Food/groceries \$400  
Cable TV/internet \$95  
Credit card payments \$125  
Miscellaneous \$ 300

- What percentage of her monthly income is spent on food/groceries?
- What percentage of her monthly income is spent on credit card payments?
- Create a circle graph illustrating Maria's expenditures for the month.

2. A random sample of 28 department stores was selected and the price of a pair of Bache PX-200 stereo speakers was checked at each store. The results to the nearest dollar were:

\$95 \$122 \$108 \$86 \$103 \$82 \$85 \$77 \$75 \$112 \$118 \$87 \$102 \$70 \$104 \$116 \$85  
\$122 \$87 \$100 \$105 \$109 \$99 \$105 \$99 \$101 \$85 \$89

- Make a stem-and-leaf display of this data.
- The majority of the speakers were in what price range?
- How much did the most expensive speakers cost?

3. John begins an exercise and weight loss plan. Listed are his weights for the next 8 weeks. Plot these weights on a line graph. Is his weight trending up or down?

Week 1	275	Week 5	266
Week 2	272	Week 6	266
Week 3	274	Week 7	263
Week 4	270	Week 8	261

4. Find an example of a bar graph in newspaper, in a magazine, or on the internet. Explain what information the graph is displaying. Is it an accurate depiction of the data or a misleading graph?