

# Chapter 11 Review

## Key Words

For #1 to #9, write the number that matches the description.

- |   |                                 |
|---|---------------------------------|
| 1. an example is every 10th person in a line-up   | _____ convenience sample        |
| 2. bias and cost are examples of these  | _____ population                |
| 3. an example is polling 2 students out of 100 about who will win an election   | _____ influencing factors       |
|   | _____ sample                    |
| 4. an example is the first 30 people entering the gates at a football game  | _____ biased sample             |
| 5. any group of individuals selected from a population  | _____ voluntary response sample |
|   | _____ random sample             |
| 6. a specific number of people selected from a population   | _____ systematic sample         |
| 7. the whole group of people being studied  | _____ stratified sample         |
| 8. an example is dividing the population into males and females and then randomly selecting a proportional number from each group |                                 |
| 9. an example is a population invited to call in to a radio talk show   |                                 |

**Influencing factors:**

- bias
- use of language
- ethics
- cost
- time and timing
- privacy
- cultural sensitivity

### 11.1 Factors Affecting Data Collection, pages 618–624

10. Name 1 influencing factor for each situation.

a) Ask the first 40 people entering a park office if they think parks are worth the cost.

\_\_\_\_\_

b) Ask 10 randomly chosen grade 8 students if the grade 12 students should have a special dance.

\_\_\_\_\_

c) Ask 15 juice drinkers if they support replacing juice in the vending machine with bottled water.

\_\_\_\_\_

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

**11.** Write 1 influencing factor that may affect data collection.  
Then, rewrite the survey question.

a) You look like a good citizen. Do you support more money for hospitals?

Influencing factor: \_\_\_\_\_

Rewrite question: \_\_\_\_\_

\_\_\_\_\_

b) Everybody loves The Rockets. Who is your favourite rock group?

Influencing factor: \_\_\_\_\_

Rewrite question: \_\_\_\_\_

\_\_\_\_\_

c) Do you prefer ice hockey or cake after school?

Influencing factor: \_\_\_\_\_

Rewrite question: \_\_\_\_\_

\_\_\_\_\_

### **11.2 Collecting Data, pages 626–634**

**12.** Identify the population for each situation. Then, describe how you would select a sample for each.

a) the spending habits of teens in Canada

Population: \_\_\_\_\_

I would select a sample by \_\_\_\_\_.

b) the popularity of different kinds of music in your school

Population: \_\_\_\_\_

I would select a sample by \_\_\_\_\_.

c) the cost of gasoline in your community

Population: \_\_\_\_\_

I would select a sample by \_\_\_\_\_.

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

13. For each situation, identify the type of sample. Identify any bias in each sample.

**Types of samples:**

- convenience
- voluntary
- random
- stratified
- systematic

a) Survey the first 20 shoppers to enter the north entrance of a mall.

Sample type: \_\_\_\_\_

There could be bias because \_\_\_\_\_

\_\_\_\_\_.

b) Divide youth conference delegates into groups according to the western province or territory where they live. Then, randomly select 20 youths from each group.

Sample type: \_\_\_\_\_

There could be bias because \_\_\_\_\_.

c) The area supervisor for a fast-food chain selects employees at 1 store location.

Sample type: \_\_\_\_\_

There could be bias because \_\_\_\_\_.

\_\_\_\_\_.

14. What type of sample do you suggest for each situation?

Give 1 reason for your choice.

a) a survey of customers to find out their favourite sundae topping

Type: \_\_\_\_\_

Reason: \_\_\_\_\_

\_\_\_\_\_.

b) a survey of doctors, nurses, and hospital administrators to find out if the hospital needs to add more patient rooms

Type: \_\_\_\_\_

Reason: \_\_\_\_\_

\_\_\_\_\_.

**11.3 Probability in Society, pages 636–648**

**15.** A town of 4000 people is electing a mayor.  
 A reporter asked 40 people who they voted for.  
 He found that 50% chose Candidate A, 20% chose Candidate B, and the rest chose Candidate C.

a) How many people surveyed chose Candidate B?

Sentence: \_\_\_\_\_

b) What is the theoretical probability that a voter will choose Candidate A?

$$P(\text{Candidate A}) = \frac{\text{number of Candidate A's}}{\text{total number of candidates}}$$

$$= \frac{1}{\boxed{\phantom{0000}}}$$

What assumption did you make? \_\_\_\_\_

Use the survey results.

c) Compare the experimental and theoretical probability of Candidate A winning.

\_\_\_\_\_

d) The reporter predicts that Candidate A will win the election.  
 Do you agree with his prediction? Circle YES or NO. Give 1 reason for your answer.

\_\_\_\_\_

**16.** Nancy is running for treasurer on student council.  
 There are 28 students in her class. Twenty classmates say they will vote for her.  
 Nancy predicts that 75% of the 328 grade 9 students will vote for her.

a) Is her prediction reasonable? Show your thinking.

Change  $\frac{20}{28}$  to a percent.

Sentence: \_\_\_\_\_

b) Write a prediction that would be more accurate.

\_\_\_\_\_

\_\_\_\_\_