

## 9.4 Exercises

### Basic Concepts

1. What are advantages and disadvantages of non-probability samples?
2. What is a judgment sample? Give an example not in the text of when a judgment sample would be appropriate.
3. What is a convenience sample? Are these samples usually representative of the population?
4. What are the worst forms of non-probability samples?
5. Explain the idea of systematic sampling. What are the advantages and disadvantages of this sampling procedure?
6. Explain the idea of cluster sampling. What are the advantages and disadvantages of this sampling procedure?
7. Explain the idea of stratified sampling. What are the advantages and disadvantages of this sampling procedure?
8. Explain why a systematic sample is not a random sample.

### Exercises

9. An employee-owned company has 6000 hourly employees and 2000 salaried employees. The human resources department decides to develop a survey on several different benefit plans, including child care and retirement benefits, that they may offer employees in the future. The results of the survey are to be presented to the board of directors for consideration. Because the human resources department wants to be sure of equal representation of the employees, it has decided to randomly select 500 hourly employees and 500 salaried employees. What kind of sampling method is the human resources department using? If the sample is used to make inferences regarding the desirability of various benefits packages for all employees, discuss any deficiencies in the sampling procedure.
10. A social researcher in Florida wants to determine the average number of children per family in the state.
  - a. What is the population of interest?
  - b. What variable will be measured?
  - c. What level of measurement is the variable of interest?
  - d. Discuss the steps that would be necessary for each of the following sampling methods.
    - i. Simple random sampling
    - ii. Cluster sampling
    - iii. Stratified sampling
  - e. What sampling method do you believe would be the most cost-effective? Justify your answer.

11. A stock analyst wants to estimate the average yearly earnings of stocks on the New York Stock Exchange.
- What is the population of interest?
  - Discuss the steps necessary to apply each of the following sampling methods.
    - Simple random sampling
    - Cluster sampling
    - Stratified sampling
12. A news reporter in Orlando, Florida wants to conduct a survey to determine how local residents feel about the institution of a state income tax. Since there will be a lot of people from which to choose, he goes to Disney World and randomly selects individuals entering the complex. He asks the selected people whether or not they favor a state income tax in Florida. The responses to the survey are as follows.

Survey Responses	
Category	% of Responses
Favor a Florida State Income Tax	50
Do Not Favor a Florida State Income Tax	50

- What sampling technique was used for this survey?
- What biases may be present in the responses?
- Is 50% a reasonable point estimate of the proportion of Orlando residents who favor the state income tax? Explain.

## CR Chapter Review

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### Key Terms and Ideas

- Sampling
- Sampling Distribution
- Voluntary Sampling
- Selection Bias
- Biased Sample
- Sampling Frame
- Simple Random Sample
- Random Number Table
- Random Number Generator
- Sampling Distribution of the Sample Mean
- Point Estimator
- Unbiased Estimator
- Standard Error of the Mean
- Central Limit Theorem
- Population Proportion
- Sample Proportion
- Sampling Distribution of the Sample Proportion
- Error of Estimation
- Probability Samples
- Non-Probability Samples
- Judgment Sample
- Convenience Sample
- Systematic Sampling
- Cluster Sampling
- Strata (stratum)
- Stratified Sampling