

**Txt: Page 544: 1-8**

Round each number to the place indicated.

1. 367 to the nearest ten <u>370</u>	2. 961 to the nearest ten <u>960</u>
3. 7400 to the nearest thousand <u>7000</u>	4. 3070 to the nearest hundred <u>3100</u>
5. 41,400 to the nearest hundred <u>41,400</u>	6. 34,254 to the nearest thousand <u>34,000</u>
7. 208,325 to the nearest thousand <u>208,000</u>	8. 654,837 to the nearest ten thousand <u>650,000</u>

1-1

## Collect and Interpret Data.

**Goals**

- Choose a procedure to sample a population.
- Interpret data from tables, charts, and survey results.

**Types of Studies**

There are many different ways of collecting data for analysis. Three common studies that can be used to collect data are survey, observation, and experiment.

A **survey** consists of asking people questions and recording their responses. For example, you might take a survey to determine the brand of toothpaste each student in your school uses.

An **observation** consists of recognizing and noticing a fact or an occurrence, without finding exact numbers. For example, you might make an observation to determine what color car drives by your house the most.

An **experiment** consists of performing a test or trial and recording your results. For example, you might perform an experiment to determine the number of times heads lands up if you flip a coin 100 times.

Section 1.1

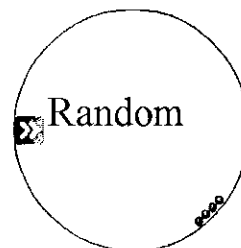
**Random Sampling:** Each member of the population is given an equal chance of being selected. The members are chosen independently of one another.

**Cluster Sampling:** The members of the population are chosen at random from a particular part of the population and are then polled in clusters.

**Convenience Sampling:** The population is chosen only because it is readily available.

**Systematic Sampling:** After the population has been ordered in some way, its members are chosen according to a pattern.

Each member of the population has an equal chance of being selected. The members are chosen independently of one another. An example is putting 100 names in a hat, then drawing 20 of the names.



The sample is chosen only because it is easily available. An example is polling ten students who happen to be sitting near you in the cafeteria.

After a population is ordered in some way, the sample is chosen according to a pattern. For example, select every tenth item from a long list.

Members of the population are chosen at random from a particular part of the population and then polled in clusters. For example, choose areas of a city at random. Visit the pet shops in these areas, asking every pet owner to name a favorite brand of pet food.

**FITNESS** Which reflects the random sampling method that a health club owner might use to identify the most popular exercise machine in the club?

- A. Ask the first 20 members who enter the club one morning.
- B. Ask the members whose phone numbers end with the digit 7.
- C. Ask members who live on the six busiest streets in town.

*convenience*

*cluster*

**MANUFACTURING** In an assembly line, every twentieth rowing machine out of 500 is quality tested. Two are defective.

- a. What kind of sampling does this situation represent? *systematic*
- b. What might be an advantage of this kind of sampling? *time saver*
- c. What might be a disadvantage of this kind of sampling?

*other machines might be defective that didn't get tested.*

**Name the Sampling Method.**  
**Give an advantage and disadvantage.**

- 1. To determine whether people like a new brand of bran muffin, ask every person who tastes a free sample at a health-food exposition.  
*random/convenience*

**Name the Sampling Method.**  
**Give an advantage and disadvantage.**

To determine the quality of ball-point pens delivered to a school-supply store, refer to company records showing 4 out of every 500 pens were found defective.

**Name the Sampling Method.**  
**Give an advantage and disadvantage.**

To determine the average amount spent at a store in a day, poll everyone who leaves the store between 5:00 and 7:00 p.m.

Name \_\_\_\_\_  
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Cluster  
2. Random  
Systematic  
Convenience

advantage:  
disadvantage:

3.  
1.  
2.