

**Factoring***Factor each polynomial completely.*

1.  $6h^3 - 18h$

2.  $3x^2 + x - 2$

3.  $9w^2 - 16$

4.  $6x^3 - 15x^2 + 8x - 20$

5.  $2v^2 + 12v - 144$

6.  $8x^3 + 27$

7.  $-2x^2 + 50$

8.  $-15x^2 + 20xy$

9.  $m^3 + 3m^2 - 4m - 12$

10.  $6y^2 - 7y - 20$

11.  $x^3 - 125$

12.  $p^2 + 8p + 12$

## **Data Collection**

*Classify each as an example of a survey, observational study, or experiment.*

13. You want to count the number of cars driving through the intersection of Richmond Road and Chardon Road during rush hour. What type of study is best for this situation?

14. You want to determine the favorite TV show on a Monday night. What type of study is best for this situation?

15. You want to determine if a new drug for treating migraines is more effective than the drug currently on the market. What type of study is best for this situation?

## **Sampling Techniques**

*Classify each as an example of simple random, stratified, systematic, cluster, voluntary response, or convenience.*

16. To identify the most popular sport of people who live in a city, interviews are conducted with fans leaving a stadium after a hockey game. Identify the type of sampling method used.

17. A light bulb manufacturer wants to determine how long its light bulbs will burn. They decide to test every 50th light bulb produced. Identify the type of sampling method used.

18. A battery manufacturer wants to determine how long its batteries will last. They assign a number to each battery produced and have a computer select the batteries to be tested. Identify the type of sampling method used.

19. A club has 20 male and 80 female members. The club president wants to determine the theme for the upcoming dance. The president asks 10 male and 10 female members. Identify the type of sampling method used.

20. Jode wants to know how students at her school feel about the new mascot. She goes to ten different classrooms during 1st period and surveys all of the students in the room. Identify the type of sampling method used.

21. To find out how its listeners feel about a new album that has been released, a radio station asks its listeners to call in and share their opinion. Identify the type of sampling method used.