

**8. Claim:** The standard deviation of pulse rates of adult women is at least 50. For the random sample of adult females in Data Set 1 from Appendix B, the pulse rates have a standard deviation of 11.6.

**Forming Conclusions.** *In Exercises 9–12, refer to the exercise identified. Using only the rare event rule, make subjective estimates to determine whether results are likely, then state a conclusion about the original claim. For example, if the claim is that a coin favors heads and sample results consist of 11 heads in 20 flips, conclude that there is not sufficient evidence to support the claim that the coin favors heads (because it is easy to get 11 heads in 20 flips by chance with a fair coin).*

9. Exercise 5

10. Exercise 6

11. Exercise 7

12. Exercise 8

**Finding Test Statistics.** *In Exercises 13–16, find the value of the test statistic. (Refer to Table 8-2 to select the correct expression for evaluating the test statistic.)*

**13. Community Involvement** Claim: Three-fourths of all adults believe that it is important to be involved in their communities. Based on a *USA Today*/Gallup poll of 1021 randomly selected adults, 89% believe that it is important to be involved in their communities.

**14. Tax Returns** Claim: Among those who file tax returns, less than one-half file them through an accountant or other tax professional. A *Fellowes* survey of 1002 people who file tax returns showed that 48% of them file through an accountant or other tax professional.

**15. White Blood Cell Count** Claim: For adult females, the standard deviation of their white blood cell counts is equal to 5.00. The random sample of 40 adult females in Data Set 1 from Appendix B has white blood cell counts with a standard deviation of 2.28.

**16. White Blood Cell Count** Claim: For adult females, the mean of their white blood cell counts is equal to 8.00. The random sample of 40 adult females in Data Set 1 from Appendix B has white blood cell counts with a mean of 7.15 and a standard deviation of 2.28. (The population standard deviation  $\sigma$  is not known.)

**Finding P-Values and Critical Values.** *In Exercises 17–24, assume that the significance level is  $\alpha = 0.05$ ; use the given statement and find the P-value and critical values. (See Figure 8-4.)*

17. The test statistic of  $z = 2.00$  is obtained when testing the claim that  $p > 0.5$ .

18. The test statistic of  $z = -2.00$  is obtained when testing the claim that  $p < 0.5$ .

19. The test statistic of  $z = -1.75$  is obtained when testing the claim that  $p = 1/3$ .

20. The test statistic of  $z = 1.50$  is obtained when testing the claim that  $p \neq 0.25$ .

21. With  $H_1: p \neq 0.25$ , the test statistic is  $z = -1.23$ .

22. With  $H_1: p \neq 2/3$ , the test statistic is  $z = 2.50$ .

23. With  $H_1: p < 0.6$ , the test statistic is  $z = -3.00$ .

24. With  $H_1: p > 7/8$ , the test statistic is  $z = 2.88$ .