15. Years to Earn Bachelor's Degree Listed below are the lengths of time (in years) it took for a random sample of college students to earn bachelor's degrees (based on data from the National Center for Education Statistics). Based on these results, does it appear that it is common to earn a bachelor's degree in 4 years?

4 4 4 4 4 4 4.5 4.5 4.5 4.5 4.5 4.5 6 6 8 9 9 13 13 15

16. Cell Phone Radiation Listed below are the measured radiation emissions (in W/kg) corresponding to these cell phones: Samsung SGH-tss9, Blackberry Storm, Blackberry Curve, Motorola Moto, T-Mobile Sidekick, Sanyo Katana Eclipse, Palm Pre, Sony Ericsson, Nokia 6085, Apple iPhone 3G S, and Kyocero Neo E1100. The data are from the Environmental Working Group. The media often present reports about the dangers of cell phone radiation as a cause of cancer. The Federal Communications Commission has a standard that cell phone radiation must be 1.6 W/kg or less. If you are planning to purchase a cell phone, are any of the measures of center the most important statistic? Is there another statistic that is most relevant? If so, which one?

0.38 0.55 1.54 1.55 0.50 0.60 0.92 0.96 1.00 0.86 1.46

17. JFK to LAX Flight Delays Listed below are the arrival delay times (in minutes) of randomly selected American Airline flights from New York's JFK airport to Los Angeles (LAX). Negative values correspond to flights that arrived early before the scheduled arrival time, and positive values represent lengths of delays. Based on these very limited results, what do you conclude about the on-time performance of American Airlines? (The data are from the Bureau of Transportation, and more data are listed in Data Set 15 in Appendix B.)

−15 −18 −32 −21 −9 −32 11 2

18. Freshman 15 According to the "freshman 15" legend, college freshmen gain 15 pounds (or 6.8 kilograms) during their freshman year. Listed below are the amounts of weight change (in kilograms) for a simple random sample of freshmen included in a study ("Changes in Body Weight and Fat Mass of Men and Women in the First Year of College: A Study of the 'Freshman 15'" by Hoffman, Policastro, Quick, and Lee, *Journal of American College Health,* Vol. 55, No. 1). Positive values correspond to students who gained weight and negative values correspond to students who lost weight. Do these values appear to support the legend that college students gain 15 pounds (or 6.8 kilograms) during their freshman year? Why or why not?

11 3 0 −2 3 −2 −2 5 −2 7 2 4 1 8 1 0 −5 2

19. Saints in Super Bowl Listed below are the numbers on the jerseys of the starting lineup for the New Orleans Saints when they recently won their first Super Bowl football game. What do the measures of center tell us about the team? Does it make sense to compute the measures of center for these data?

9 23 25 88 12 19 74 77 76 73 78

20. Phenotypes of Peas Biologists conducted experiments to determine whether a deficiency of carbon dioxide in the soil affects the phenotypes of peas. Listed below are the phenotype codes, where 1 = smooth-yellow, 2 = smooth-green, 3 = wrinkled-yellow, and 4 = wrinkled-green. Can the measures of center be obtained for these values? Do the results make sense?

2 1 1 1 1 1 1 4 1 2 2 1 2 3 3 2 3 1 3 1 3 1 3 2 2

In Exercises 21–24, find the* mean *and* median *for each of the two samples; then compare the two sets of results.

21. Speeding and Race Listed below are speeds (in mi/h) of cars on the New Jersey Turnpike. All cars are going in the same direction, and all of the cars are from New Jersey. The speeds were measured with a radar gun and the researchers observed the races of the drivers.