c. Convert President Obama's net worth to a z score.

d. If we consider "usual" amounts of net worth to be those that convert to z scores between −2 and 2, is President Obama's net worth usual or unusual?

6. Earthquakes Data Set 16 in Appendix B lists 50 magnitudes (Richter scale) of 50 earthquakes, and those earthquakes have magnitudes with a mean of 1.184 with a standard deviation of 0.587. The strongest of those earthquakes had a magnitude of 2.95.

a. What is the difference between the magnitude of the strongest earthquake and the mean magnitude?

b. How many standard deviations is that (the difference found in part (a))?

c. Convert the magnitude of the strongest earthquake to a z score.

d. If we consider "usual" magnitudes to be those that convert to z scores between −2 and 2, is the magnitude of the strongest earthquake usual or unusual?

7. Jobs' Job When Steve Jobs was Chief Executive Officer (CEO) of Apple, he earned an annual salary of $1. The CEOs of the 50 largest U. S. companies had a mean salary of $1,449,779 and a standard deviation of $527,651 (based on data from USA Today).

a. What is the difference between Jobs' salary and the mean CEO salary?

b. How many standard deviations is that (the difference found in part (a))?

c. Convert Steve Jobs' salary to a z score.

d. If we consider "usual" salaries to be those that convert to z scores between −2 and 2, is Steve Jobs' salary usual or unusual?

8. Student's Pulse Rate A male student of the author has a measured pulse rate of 52 beats per minute. Based on Data Set 1 in Appendix B, males have a mean pulse rate of 67.3 beats per minute and a standard deviation of 10.3 beats per minute.

a. What is the difference between the student's pulse rate and the mean pulse rate of males?

b. How many standard deviations is that (the difference found in part (a))?

c. Convert the student's pulse rate to a z score.

d. If we consider "usual" pulse rates to be those that convert to z scores between −2 and 2, is the student's pulse rate usual or unusual?

Usual and Unusual Values.   *In Exercises 9–12, consider a value to be* unusual *if its z score is less than* −2 *or greater than* 2.

9. IQ Scores The Wechsler Adult Intelligence Scale measures IQ scores with a test designed so that the mean is 100 and the standard deviation is 15. Consider the group of IQ scores that are unusual. What are the z scores that separate the unusual IQ scores from those that are usual? What are the IQ scores that separate the unusual IQ scores from those that are usual?

10. Designing Aircraft Seats In the process of designing aircraft seats, it was found that men have hip breadths with a mean of 36.6 cm and a standard deviation of 2.5 in. (based on anthropometric survey data from Gordon, Clauser, et al.). Consider the values of hip breadths of men that are unusual. What are the z scores that separate the unusual hip breadths from those that are usual? What are the hip breadths that separate the unusual hip breadths from those that are usual?