

4. Body Temperatures Human body temperatures have a mean of 98.20° and a standard deviation of 0.62° . Convert the given temperatures to z scores.
- a. 100° b. 96.96° c. 98.20°

In Exercises 5–8, express all z scores with two decimal places. Consider a score to be unusual if its z score is less than -2.00 or greater than 2.00 .

5. Heights of Women The Beanstalk Club is limited to women and men who are very tall. The minimum height requirement for women is 70 in. Women's heights have a mean of 63.6 in. and a standard deviation of 2.5 in. Find the z score corresponding to a woman with a height of 70 in. and determine whether that height is unusual.

6. Length of Pregnancy A woman wrote to *Dear Abby* and claimed that she gave birth 308 days after a visit from her husband, who was in the Navy. Lengths of pregnancies have a mean of 268 days and a standard deviation of 15 days. Find the z score for 308 days. Is such a length unusual? What do you conclude?

7. Body Temperature Human body temperatures have a mean of 98.20° and a standard deviation of 0.62° . An emergency room patient is found to have a temperature of 101° . Convert 101° to a z score. Is that temperature unusually high? What does it suggest?

8. Cholesterol Levels For men aged between 18 and 24 years, serum cholesterol levels (in mg/100 ml) have a mean of 178.1 and a standard deviation of 40.7 (based on data from the National Health Survey). Find the z score corresponding to a male, aged 18–24 years, who has a serum cholesterol level of 259.0 mg/100 ml. Is this level unusually high?

9. Comparing Test Scores Which is relatively better: A score of 85 on a psychology test or a score of 45 on an economics test? Scores on the psychology test have a mean of 90 and a standard deviation of 10. Scores on the economics test have a mean of 55 and a standard deviation of 5.

10. Comparing Scores Three students take equivalent tests of a sense of humor and, after the laughter dies down, their scores are calculated. Which is the highest relative score?

- a. A score of 144 on a test with a mean of 128 and a standard deviation of 34.
 b. A score of 90 on a test with a mean of 86 and a standard deviation of 18.
 c. A score of 18 on a test with a mean of 15 and a standard deviation of 5.

11. Weights of Coke Refer to Data Set 17 in Appendix C for the sample of 36 weights of regular Coke. Convert the weight of 0.7901 to a z score. Is 0.7901 an unusual weight for regular Coke?

12. Green M&Ms Refer to Data Set 19 in Appendix C for the sample of weights of green M&M candies. Convert the weight of the heaviest green M&M candy to a z score. Is the weight of that heaviest green M&M an unusual weight for green M&Ms?

- 2 In Exercises 13–16, use the 40 sorted cotinine levels of smokers listed in Table 2-13. Find the percentile corresponding to the given cotinine level.

13. 149 14. 210 15. 35 16. 250

- 2 In Exercises 17–24, use the 40 sorted cotinine levels of smokers listed in Table 2-13. Find the indicated percentile or quartile.

17. P_{20} 18. Q_3 19. P_{75} 20. Q_2
 21. P_{33} 22. P_{21} 23. P_1 24. P_{85}