6-2 Basic Skills and Concepts

Statistical Literacy and Critical Thinking

1. Normal Distribution When we refer to a "normal" distribution, does the word *normal* have the same meaning as in ordinary language, or does it have a special meaning in statistics? What exactly is a normal distribution?

2. Normal Distribution A normal distribution is informally described as a probability distribution that is "bell-shaped" when graphed. Draw a rough sketch of a curve having the bell shape that is characteristic of a normal distribution.

3. Standard Normal Distribution Identify the requirements necessary for a normal distribution to be a *standard* normal distribution.

4. Notation What does the notation z_α indicate?

Continuous Uniform Distribution. ***In Exercises 5–8, refer to the continuous uniform distribution depicted in Figure 6-2 and described in Example 1. Assume that a subway passenger is randomly selected, and find the probability that the waiting time is within the given range.***

5. Greater than 1.25 minutes

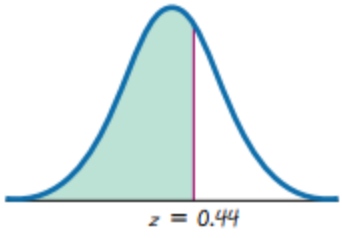
6. Less than 0.75 minutes

7. Between 1 minute and 3 minutes

8. Between 1.5 minutes and 4.5 minutes

Standard Normal Distribution. ***In Exercises 9–12, find the area of the shaded region. The graph depicts the standard normal distribution of bone density scores with mean 0 and standard deviation 1.***

9.



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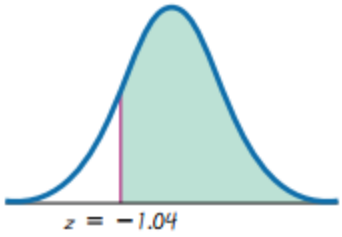

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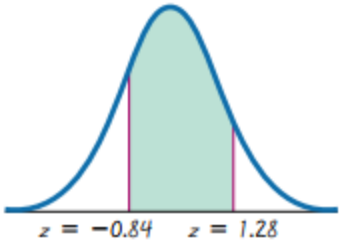

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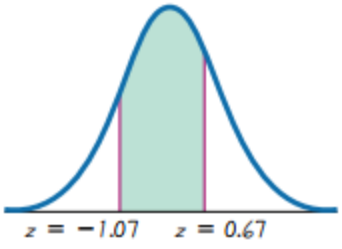
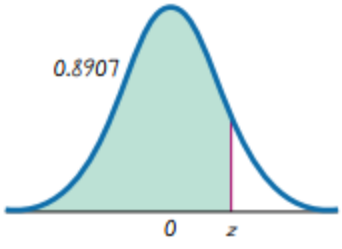


Standard Normal Distribution. ***In Exercises 13–16, find the indicated z score. The graph depicts the standard normal distribution of bone density scores with mean 0 and standard deviation 1.***

13.



14.