12-4 Additional Practice

Probability Distributions

1. What is the difference between a probability experiment that is a binomial experiment and one that is not a binomial experiment?

2. A light fixture contains 6 light bulbs. With normal use, each bulb has a 0.85 chance of lasting for at least 4 months. What is the theoretical probability that all 6 bulbs will last for 4 months? Round to the nearest whole percent.

3. A marble is chosen at random from a bag containing 8 marbles: 4 blue, 3 green, and 1 red. Define a probability distribution for this experiment on the sample space {B, G, R}.

4. An online game has three possible outcomes: A, B, or C. After playing the game, Leo got A 12 times, B 9 times, and C 4 times. Define an experimental probability distribution based on Leo's results.

Use this information for Items 5–7. There is a 60% probability of rain each of the next 5 days. Find each probability. Round to the nearest whole percent.

5. It will rain on at least 3 of the next 5 days.

6. It will rain on at least 1 of the next 5 days.

7. It will rain on at least 1 of the next 2 days.