6.1 Exercises

Basic Concepts

1. What is a random variable?

2. What is a probability distribution?

3. Do all random variables have easily determined probability distributions? Explain.

4. What are the two types of random variables discussed in the chapter? What distinguishes the two types?

Exercises

5. Classify the following as either a discrete random variable or a continuous random variable.

a. The number of pages in a standard math textbook.

b. The amount of electricity used daily in a home.

c. The number of customers entering a restaurant in one day.

d. The time spent daily on the phone after supper by a teenager.

e. Campers at a state park over Labor Day weekend.

6. Classify the following as either a discrete random variable or a continuous random variable.

a. The speed of a train.

b. The possible scores on the SAT reasoning test.

c. The number of pizzas delivered on a college campus each day.

d. The daily takeoffs at Chicago's O'Hare Airport.

e. The high temperatures in Maine and Florida tomorrow.

7. Classify the following as either a discrete random variable or a continuous random variable.

a. The number of emergency phone calls received per day by a local fire department.

b. The speed of pitches of major league baseball pitchers.

c. The weight of a lobster caught in Maine.

d. The number of defective circuits on a computer chip.

e. The time it takes for a 5-year battery to die.

8. Classify the following as either a discrete random variable or a continuous random variable.

a. The total points scored per football game for a local high school team.

b. The daily price of a stock.

c. The interest rate charged by local banks for 30-year mortgages.

d. The number of times a backup of the computer network is performed in a month.

e. The amount of sugar imported by the U.S. in a day.