EXERCISES

Practice

Determine if the events in Exercises 9–12 are *mutually exclusive* or *inclusive*. Then find each probability.

9. There are 3 physics books, 4 math books, and 2 history books on a shelf. If a book is randomly selected, what is the probability of selecting a physics book or a history book?

10. A card is drawn from a deck of cards. What is the probability that it is a black card or a face card?

11. One die is tossed. What is the probability of tossing a 5 or a number greater than 3?

12. In the drama club, 7 of the 20 girls are seniors, and 4 of the 14 boys are seniors. What is the probability of randomly selecting a boy or a senior to represent the drama club at a national performing arts symposium?

Juanita has 9 rings in her jewelry box. Five are gold and 4 are silver. If she randomly selects 3 rings to wear to a party, find each probability.

13. P(exactly 2 silver)

14. P(all 3 gold or all 3 silver)

15. P(at least 2 gold)

16. P(at least 1 silver)

Two cards are drawn from a standard deck of 52 cards. Find each probability.

17. P(both kings or both black)

18. P(both kings or both face cards)

19. P(both face cards or both red)

20. P(both either red or a king)

Seven women and six men walk into a computer store at the same time. There are five salespeople available to help them. Find the probability that a salesperson will first help:

21. P(4 women, 1 man or 4 men, 1 woman)

22. P(3 women, 2 men or 3 men, 2 women)

23. P(all women or all men)

24. P(at least 3 women)

The numbers 1 through 30 are written on table tennis balls and placed in one wire cage. The numbers 20 through 45 are also written on table tennis balls and placed in a different wire cage. One ball is chosen at random from each spinning cage. Find each probability.

25. P(each is a 25)

26. P(neither is a 20)

27. P(at least one is a 30)

28. P(each is greater than 15)

Critical Thinking

29. Suppose there are three inclusive events, A, B, and C. List all the events you would need to consider in order to calculate $P(A \text{ or } B \text{ or } C)$ and describe how you would calculate the probability.

CHECK FOR UNDERSTANDING

Communicating Mathematics

Study the lesson. Then complete the following.

1. **Describe** the difference between *mutually exclusive* and *inclusive* events.

2. **Write** an example of three inclusive events that could occur in everyday life.

3. **Draw** a Venn diagram to illustrate the events in Example 2.

MATH JOURNAL

4. Refer to the comic at the beginning of the lesson.
   a. Why is the forecaster's prediction incorrect?
   b. What do you need to know to find the correct probability of rain for the weekend?

Guided Practice

5. Determine if each event of drawing a card from a standard deck of cards is *mutually exclusive* or *inclusive*. Then find the probability.
   a. P(5 or ace)
   b. P(jack or diamond)

6. Six coins are dropped onto the floor. Find each probability.
   a. P(at least 4 heads)
   b. P(3 tails or 2 heads)
   c. P(4 tails or 1 head)
   d. P(all heads or all tails)

7. The letters of the alphabet are placed in a bag. What is the probability of selecting a vowel or a letter from the word *equation*?

8. **School** The enrollment at Southburg High School is 1400. Suppose 550 students take French, 700 take algebra, and 400 take both French and algebra. What is the probability that a student selected at random takes French or algebra?