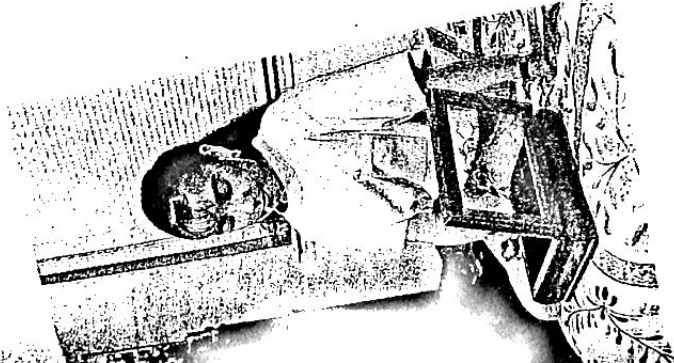


EXERCISES

Practice

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

- 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?
- A card is drawn from a deck of cards. What is the probability that it is a black card or a face card?
- One die is tossed. What is the probability of tossing a 5 or a number greater than 3?
- 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.

- Exactly 2 silver
- At least 2 gold
- All 3 gold or all 3 silver
- At least 1 silver

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

- Both kings or both black
- Both face cards or both red
- Both kings or both face cards
- 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:

- 4 women, 1 man or 4 men, 1 woman
- 3 women, 2 men or 3 men, 2 women
- All women or all men
- 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.

- Each is a 25
- Neither is a 20
- At least one is a 30
- Each is greater than 15

Critical Thinking

- 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.

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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. $P(5 \text{ or ace})$
 - b. $P(\text{jack or diamond})$
6. Six coins are dropped onto the floor. Find each probability.
 - a. $P(\text{at least 4 heads})$
 - b. $P(3 \text{ tails or 2 heads})$
 - c. $P(4 \text{ tails or 1 head})$
 - d. $P(\text{all heads or all tails})$

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?

