

**LESSON
11.4****Practice C***For use with the lesson "Find Probabilities of Disjoint and Overlapping Events"***Find the indicated probability. State whether A and B are disjoint events.**

1. $P(A) = \frac{4}{11}, P(B) = \underline{\quad? \quad}$

$P(A \text{ or } B) = \frac{8}{11}$

$P(A \text{ and } B) = \frac{2}{11}$

2. $P(A) = 34\%, P(B) = 41\%$

$P(A \text{ or } B) = \underline{\quad? \quad}$

$P(A \text{ and } B) = 45\%$

3. $P(A) = \frac{1}{3}, P(B) = \frac{1}{2}$

$P(A \text{ or } B) = \frac{5}{6}$

$P(A \text{ and } B) = \underline{\quad? \quad}$

**Two six-sided dice are rolled. Find the probability of the given event.
(Refer to Example 4 on page 709 of the textbook for the possible outcomes.)**

4. The sum is even or odd.
5. The sum is 3 or 9.
6. The sum is *not* 8.
7. The sum is less than 10 and greater than 5.
8. **National Companies** An employee of a large national company is promoted to management and will have to relocate in the next 6 months. There is a 24% probability that the employee will be transferred to San Diego, California, a 50% probability that the employee will be transferred to Boston, Massachusetts, and a 10% probability that the employee will be transferred to Dallas, Texas. What is the probability that the employee will *not* be transferred to either San Diego or Dallas?
9. **Book Collections** You have a book collection that consists of 20 horror novels, 15 romance novels, and 25 mystery novels. You randomly pick 4 books to read during a long trip. What is the probability that you pick at least one book of each type?

In Exercises 10–13, use the following information.**Odds** The odds in favor of an event occurring are the ratio of the probability that the event will occur to the probability that an event will not occur. The reciprocal of the ratio represents the odds against the event occurring.

10. A jar contains five green marbles. The odds against choosing a green marble are 5 to 1. How many marbles are in the jar?
11. A jar contains three red marbles and some green marbles. The odds that a randomly chosen marble is green are 3 to 1. How many green marbles are in the jar?
12. A jar contains 4 red marbles and 8 blue marbles. What are the odds in favor of choosing a red marble? What are the odds against choosing a red marble?
13. Write a formula that (a) converts the odds in favor of an event to the probability of the event and (b) converts the probability of an event to the odds in favor of the event.