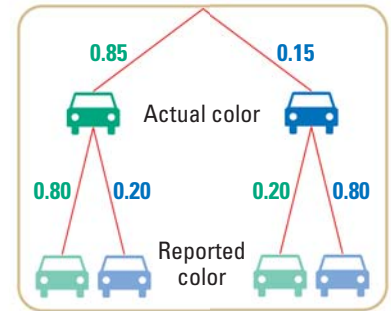


**EXAMPLE 7**

on p. 720  
for Exs. 39–40

39. **TENNIS** A tennis player wins a match 55% of the time when she serves first and 47% of the time when her opponent serves first. The player who serves first is determined by a coin toss before the match. What is the probability that the player wins a given match?

40. **ACCIDENT REENACTMENT** You are a juror for a trial involving a nighttime car accident in a certain city. Use the tree diagram and the facts below to determine the probability that the car involved in the accident was blue.



- The make of the car is known. Of the cars in the city matching this make, 85% are green and 15% are blue.
- A witness of the accident identified the car as blue.
- In reenactments of the accident, the witness correctly reported the color of the car 80% of the time.

41. **TAKS REASONING** A football team is losing by 14 points near the end of a game. The team scores two touchdowns (worth 6 points each) before the end of the game. After each touchdown, the coach must decide whether to go for 1 point with a kick (which is successful 99% of the time) or 2 points with a run or pass (which is successful 45% of the time).
- Calculate** If the team goes for 1 point after each touchdown, what is the probability that the coach's team wins? loses? ties?
  - Calculate** If the team goes for 2 points after each touchdown, what is the probability that the coach's team wins? loses? ties?
  - Reasoning** Can you develop a strategy so that the coach's team has a probability of winning the game that is greater than the probability of losing? If so, explain your strategy and calculate the probabilities of winning and losing using your strategy.
42. **CHALLENGE** It is estimated that 5.9% of Americans have diabetes. Suppose a medical lab uses a test for diabetes that is 98% accurate for people who have the disease and 95% accurate for people who do not have it. Find the conditional probability that a randomly selected person actually has diabetes given that the lab test says they have it.



## MIXED REVIEW FOR TAKS

**TAKS PRACTICE** at classzone.com

### REVIEW

Lesson 2.4;  
TAKS Workbook

43. **TAKS PRACTICE** What are the slope and  $y$ -intercept of the line that contains the point  $(4, -2)$  and is parallel to the line  $y = -2x + 1$ ? **TAKS Obj. 3**

- (A)  $m = -2$       (B)  $m = -\frac{3}{4}$       (C)  $m = -2$       (D)  $m = \frac{1}{2}$   
 $b = 0$                        $b = 1$                        $b = 6$                        $b = -4$

### REVIEW

Lesson 4.5;  
TAKS Workbook

44. **TAKS PRACTICE** What is the solution set for the equation  $7 - 12x^2 = -1$ ? **TAKS Obj. 5**

- (F)  $\left\{-\frac{\sqrt{6}}{2}, \frac{\sqrt{6}}{2}\right\}$                       (G)  $\left\{-\frac{\sqrt{6}}{3}, \frac{\sqrt{6}}{3}\right\}$   
(H)  $\left\{-\frac{\sqrt{3}}{2}, \frac{\sqrt{3}}{2}\right\}$                       (J)  $\left\{-\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2}\right\}$