48. ▼ **TAKS REASONING** Assume that having a male child and having a female child are independent events and that the probability of each is 0.5.

    a. A couple has 4 male children. Evaluate the validity of this statement: "The first 4 kids were all boys, so the next one will probably be a girl."

    b. What is the probability of having 4 male children and then a female child?

    c. Let X be a random variable that represents the number of children a couple already has when they have their first female child. Draw a histogram of the distribution of $P(X)$ for $0 \le X \le 10$ and describe its shape.

49. **CHALLENGE** An entertainment system has n speakers. Each speaker will function properly with probability p, independent of whether the other speakers are functioning. The system will operate effectively if at least 50% of its speakers are functioning. For what values of p is a 5-speaker system more likely to operate than a 3-speaker system?

MIXED REVIEW FOR TAKS

50. ▼ **TAKS PRACTICE** For an emergency service call, an electrician charges a base fee of $65 plus $36.50 per hour of work. Which equation best represents the relationship between the total cost, c, of the emergency service call and the number of hours worked, n? *TAKS Obj. 1*

    A $c = 65 + 36.5$ **B** $c = 65 + 36.5n$

    C $c = 65n + 36.5$ **D** $c = 65n + 36.5n$

51. ▼ **TAKS PRACTICE** What is the solution of the equation $3(4x - 5) = -4(-x + 6) - 8x$? *TAKS Obj. 2*

    F $-\dfrac{3}{5}$ **G** $-\dfrac{9}{16}$ **H** $\dfrac{3}{8}$ **J** $\dfrac{9}{16}$

QUIZ *for Lessons 10.5–10.6*

Find the probability of randomly drawing the given marbles from a bag of 6 red, 9 green, and 5 blue marbles without replacement. *(p. 717)*

  1. red, then green   **2.** blue, then red   **3.** green, then green

Calculate the probability of getting the given number of 6's when rolling a six-sided die 10 times. *(p. 724)*

  4. 0   **5.** 1   **6.** 4   **7.** 8

A binomial experiment consists of n trials with probability p of success on each trial. Draw a histogram of the binomial distribution that shows the probability of exactly k successes. *(p. 724)*

  8. $n = 5, p = 0.2$ **9.** $n = 8, p = 0.5$ **10.** $n = 6, p = 0.72$

11. **MENU CHOICES** You and 4 friends are in line at lunch and are each selecting a beverage. There are 5 types of beverages available. What is the probability that all of you will select different beverages? *(p. 717)*