## Practice

## Solving Equations Using the Distributive Property

1. Use the Distributive Property to solve the equation -2(x + 5) = 4.

2. Solve the equation 8(x - 4) = 16 without using the Distributive Property.

3. Which operation do you need to solve x + 3 = 6?

O A. division

O C. subtraction

O B. addition

O D. multiplication

**4.** Which operations do you need to solve 3x - 8 = -2?

**5.** A family buys 4 airline tickets online. The family buys travel insurance that costs \$19 per ticket. The total cost is \$752. Let x represent the price of one ticket.

a) Which equation represents this situation?

 $\bigcirc$  A. 19 = 4x + 752

 $\bigcirc$  C. 752 = 4(x + 19)

 $\bigcirc$  B. 752 = 19(x + 4)

O D. 752 = 4x + 19

b) What is the price of one ticket?

**6.** Last season, a sports fan spent \$5,248 to see her favorite team play 41 games. To see each game, the fan had to buy a ticket and pay \$40 for parking. Let p represent the amount the fan paid for each ticket.

a) Which equation represents the total amount the fan paid?

O A. 5,248 = 40p + 41

 $\bigcirc$  C. 5,248 = 41p + 40

 $\bigcirc$  B. 5,248 = 40(p + 41)

O D. 5,248 = 41(p + 40)

**b)** A friend of the sports fan bought 5 tickets at the same price. How much did the friend spend?

7. a) Writing Which operation do you need to solve  $\frac{x}{2.6} = 2$ ?

O A. addition

O C. division

O B. multiplication

O D. subtraction

**b)** Describe how you know which operation to use to solve any equation with one operation for the four basic operations.

- 8. Reasoning Kiera and Javier are grouping equations based on the number of operations needed to solve them. In order to solve the equation -8(9 + x) = 111, Kiera says that you need three operations. Javier says you need two operations. Their teacher says that they are both correct.
  - a) Which of the following would solve the equation in three operations?
    - O A. First use the Distributive Property. Then use addition and division.
    - O B. First use addition. Then use division and subtraction.
    - O C. First use division. Then use addition and multiplication.
    - O D. First use subtraction. Then use the Distributive Property and division.
    - O E. First use the Distributive Property. Then use addition and multiplication.
  - **b)** Explain how you can use two operations to solve the equation. Which method do you prefer? Why?
- 9. Error Analysis The solution shown for the equation is incorrect.

$$-3(6 - r) = 6$$

$$-18 - 3r = 6$$

$$-3r = 24$$

$$r = -8$$

- a) What is the correct solution?
- b) What is the error?
  - $\odot$  A. The left side of the equation should be -18 + 3r after distributing.
  - $\bigcirc$  B. The right side of the equation should be -12 after subtracting -18 from each side.
  - $\bigcirc$  C. The left side of the equation should be –r after dividing each side by –3.
  - $\odot$  D. The right side of the equation should be 8 after dividing each side by -3.
- 10. Sales Fadil sells televisions. He earns a fixed amount for each television and an additional \$15 if the buyer gets an extended warranty. If Fadil sells 12 televisions with extended warranties, he earns \$900. How much is the fixed amount Fadil earns for each television?
- 11. a) Multiple Representations Use the Distributive Property to solve the equation 95.4 = 9(m + 2.2).
  - **b)** Draw a picture that represents the equation and shows the solution.
- 12. Use the Distributive Property to solve the equation  $3.2 = \frac{4}{5}(b-5)$ .
- 13. Solve the equation -9.2(x 3.5) = 36.8 without using the Distributive Property.
- **14. Challenge** The ticket price for a concert at a historic music hall includes \$6.70 for the concert, \$4.20 for the program, and a hall restoration fee. The price for 19 tickets is \$223.25. How much is the restoration fee?

- **15.** Challenge A cell phone plan costs \$19.70 per month for 700 minutes of talk time. It costs an additional \$0.05 per minute for each minute over 700 minutes. To get e-mail access, it costs 10% of the price for 700 minutes of talk time. Your bill, which includes e-mail, is the same each month for 7 months. The total cost for all 7 months is \$180.39. Let m represent the number of minutes over 700 minutes each month.
  - a) Which equation represents the given situation?
    - $\bigcirc$  A. 180.39 = 7(m + 19.70 + 0.90(19.70))
    - $\bigcirc$  B. 180.39 = 7(0.05m + 19.70 + 0.10(19.70))
    - $\bigcirc$  C. 180.39 = 7(0.05m + 19.70)
    - $\bigcirc$  D. 180.39 = 7(m + 19.70)
  - **b)** Solve the equation to find out how many minutes of talk time you use each month.