Name _____ Class _____ Date _____

Practice 8-4

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 $x + 3 = 6$?

❍ A. division
❍ B. addition
❍ C. subtraction
❍ 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?

❍ A. $19 = 4x + 752$
❍ B. $752 = 19(x + 4)$
❍ C. $752 = 4(x + 19)$
❍ 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?

❍ A. $5{,}248 = 40p + 41$
❍ B. $5{,}248 = 40(p + 41)$
❍ C. $5{,}248 = 41p + 40$
❍ 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 $\frac{x}{2.6} = 2$?

❍ A. addition
❍ B. multiplication
❍ C. division
❍ 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?

   ❍ A. First use the Distributive Property. Then use addition and division.

   ❍ B. First use addition. Then use division and subtraction.

   ❍ C. First use division. Then use addition and multiplication.

   ❍ D. First use subtraction. Then use the Distributive Property and division.

   ❍ 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?

   ❍ A. The left side of the equation should be $-18 + 3r$ after distributing.

   ❍ B. The right side of the equation should be -12 after subtracting -18 from each side.

   ❍ C. The left side of the equation should be $-r$ after dividing each side by -3.

   ❍ 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?

- ❍ A. $180.39 = 7(m + 19.70 + 0.90(19.70))$
- ❍ B. $180.39 = 7(0.05m + 19.70 + 0.10(19.70))$
- ❍ C. $180.39 = 7(0.05m + 19.70)$
- ❍ D. $180.39 = 7(m + 19.70)$

b) Solve the equation to find out how many minutes of talk time you use each month.