

**Practice
2-3*****Solving Equations Using the Distributive Property***

1. Use the Distributive Property to solve the equation $3(x + 4) = 27$.
2. Use the Distributive Property to solve the equation $3(x - 6) + 6 = 5x - 6$.
3. Use the Distributive Property to solve the equation $8 + \frac{1}{7}x = 9$.
4. Use the Distributive Property to solve the equation $\frac{z}{2} + 4 = 5 - \frac{z}{2}$.
5. Donavon and some friends go to a fair. Donavon spends $\frac{1}{2}$ of his money on rides. He then spends \$3 on food. At the end of the day, Donavon has \$2 remaining. Let d represent the amount of money Donavon brought to the fair.
 - a) Which equation represents the situation?

☐ A. $\frac{1}{2}d - 3 = 2$	☐ C. $\frac{1}{2}d + 3 = 2$
☐ B. $2d - \frac{1}{2} = 3$	☐ D. $\frac{1}{2} - 3d = 2$
 - b) How much money did Donavon bring to the fair?
6. Peter has to use the following information to find the original number. If you double a number and then add 40, you get $\frac{2}{11}$ of the original number. Let x represent the original number.
 - a) Which equation represents the situation?

☐ A. $\frac{2}{11} + 2x = 11$	☐ C. $2x + 40 = \frac{2}{11}x$
☐ B. $2x + \frac{2}{11} = 40$	☐ D. $40x - 2 = \frac{2}{11}x$
 - b) What is the original number?
7. **a) Writing** Use the Distributive Property to solve the equation $2(m + 2) = 22$.
 - b) Describe what it means to distribute the 2 to each term inside the parentheses.
8. **a) Reasoning** Use the Distributive Property to solve the equation $28 - (3c + 4) = 2(c + 6) + c$.
 - b) Explain why the Distributive Property makes it possible to solve this equation.

9. Error Analysis A teacher gives her students the equation $\frac{1}{2}t + 3 = 1$. She tells the students to multiply each side of the equation by 2 to eliminate the fraction. Jenna claims the answer is -1 .

a) Use the Distributive Property to solve the equation $\frac{1}{2}t + 3 = 1$.

b) What error did Jenna likely make?

- ☐ A. Jenna did not distribute 2 to 1.
- ☐ B. Jenna did not distribute 2 to 3.
- ☐ C. Jenna did not add 3 to 1.
- ☐ D. Jenna did not subtract 2 from 3.

10. Mental Math If you take $\frac{3}{10}$ of a number and add 1, you get 10. Let x represent the original number.

a) Which equation represents the situation?

- ☐ A. $\frac{3}{10}x + 1 = 10$
- ☐ B. $\frac{3}{10}x + 10 = 1$
- ☐ C. $\frac{3}{10} + x = 10$
- ☐ D. $\frac{3}{10} + 10x = 1$

b) What is the original number?

11. Manufacturing Three robots make the same item. Each day, Robot B can make $2\frac{1}{2}$ times as many items as Robot A. Robot C makes 20 items each day. In one day, the three robots combined can make 48 items. Let s be the number of items that Robot A can make each day.

a) Which equation represents the situation?

- ☐ A. $s + 2\frac{1}{2}s + 20s = 48$
- ☐ B. $2\frac{1}{2}s + 20s = 48$
- ☐ C. $s(48 + 20) = 2\frac{1}{2}$
- ☐ D. $s + 2\frac{1}{2}s + 20 = 48$

b) How many items can Robot A make each day?

12. Estimation

a) Approximate the solution of the equation below by rounding all values to the nearest integer.

$$\frac{4}{5}m + 4 = 12$$

b) After estimating, use the Distributive Property to solve the equation.

13. Use the Distributive Property to solve the equation.

$$4x - 2(x - 2) = -9 + 5x - 8$$

14. Think About the Process

a) Apply the Distributive Property to rewrite $3(6 - x) = 3$.

☐ A. $6(3) + 6x = 3$

☐ C. $3(6) + 3x = 3$

☐ B. $3(6) - 3x = 3$

☐ D. $6(3) - 6x = 3$

b) The solution of the equation is _____.

15. Think About the Process You are given the following equation.

$$\frac{3}{4}k - 10 = 1$$

a) You want to use the Distributive Property to solve the equation. By what number would you multiply each side of the equation?

b) What is the solution of the equation?

c) Describe another way to find the solution.

1. $x = 5$
2. $x = -3$
3. $x = 7$
4. $z = 1$
5. a) A
b) \$10
6. a) C
b) -22
7. a) $m = 9$
b) Answers will vary
8. a) $c = 2$
b) Answers will vary
9. a) $t = -4$
b) B
10. a) A
b) 30
11. a) D
b) 8
12. a) $m \approx 8$
b) $m = 10$
13. $x = 7$
14. a) B
b) $x = 5$
15. a) 4
b) $k = 14\frac{2}{3}$
c) Answers will vary