

Name \_\_\_\_\_

## 11.7 Like Terms

## 11.8 The Distributive Property

MATHPOWER™ *Eight*, pp. 402–403

Terms that have the same variable parts are called like terms. The terms  $2x$ ,  $4x$ , and  $5x$  are like terms. The terms  $6x$ ,  $3x^2$ , and  $4y$  are unlike terms. Only like terms can be combined.

To expand an expression with brackets means to remove the brackets by multiplying. This is done using the distributive property.

$$\begin{aligned}4(x - 3) &= 4(x - 3) \\ &= 4 \times x - 4 \times 3 \\ &= 4x - 12\end{aligned}$$

Multiply each term inside the brackets by 4.

*Simplify.*

1.  $2x + 7x$   
\_\_\_\_\_

2.  $7y - 3y$   
\_\_\_\_\_

3.  $4z + 3z + 2z$   
\_\_\_\_\_

4.  $6p - 3p + 7p$   
\_\_\_\_\_

5.  $12f - 4f - 2f$   
\_\_\_\_\_

6.  $x + 3x + 6x$   
\_\_\_\_\_

7.  $7d + 8b - 3d + 4b$   
\_\_\_\_\_

8.  $3t + 4y + 5y + t$   
\_\_\_\_\_

9.  $7 + 5c + 7c - 3c$   
\_\_\_\_\_

10.  $z + 2z + x + 3x$   
\_\_\_\_\_

11.  $3m + n + 4n - m$   
\_\_\_\_\_

12.  $9w - 6w - 2w + u$   
\_\_\_\_\_

*Simplify, then evaluate for  $x = 3$  and  $y = 2$ .*

13.  $8x + 3x - 2x + 3y$  \_\_\_\_\_

14.  $7x - 2y + 5x + 4y$  \_\_\_\_\_

15.  $5x + 6y - 5x - 4y$  \_\_\_\_\_

16.  $4x - 6x + 2y - 6y$  \_\_\_\_\_

17.  $x + 4x - 2x + 9y$  \_\_\_\_\_

18.  $8y - 7x + 2y - x$  \_\_\_\_\_

*Expand.*

19.  $3(x + 6)$   
\_\_\_\_\_

20.  $4(a + 4)$   
\_\_\_\_\_

21.  $7(y - 3)$   
\_\_\_\_\_

22.  $8(b - 2)$   
\_\_\_\_\_

23.  $5(3 + c)$   
\_\_\_\_\_

24.  $2(9 + d)$   
\_\_\_\_\_

25.  $7(6 - s)$   
\_\_\_\_\_

26.  $9(3 - x)$   
\_\_\_\_\_

*Expand.*

27.  $3(4z + 3)$   
\_\_\_\_\_

28.  $5(6p - 2)$   
\_\_\_\_\_

29.  $-7(3q - 1)$   
\_\_\_\_\_

30.  $-2(1 + 6d)$   
\_\_\_\_\_

31.  $4(3x - 7y)$   
\_\_\_\_\_

32.  $8(7a + 4b)$   
\_\_\_\_\_

33.  $4(3x + 7y + 2)$   
\_\_\_\_\_

34.  $6(a - 2b + 3)$   
\_\_\_\_\_

35.  $-3(3 + 4c + d)$   
\_\_\_\_\_

36.  $-8(2 - g - h)$   
\_\_\_\_\_