

Using the Distributive Principle

The terms x and 3 are not like terms, so we cannot simplify $5(x + 3)$ by adding the terms in the parentheses. Instead, we use the Distributive Principle.

$$5(\overset{\curvearrowright}{x + 3}) = 5x + 5 \cdot 3 = 5x + 15$$

$$5(x - 3) = 5x - 5 \cdot 3 = 5x - 15$$

Write an equivalent expression using the Distributive Principle.

$$2(\overset{\curvearrowright}{x + 6}) = 2x + 12$$

$$2(x - 6) =$$

$$3(2x + 4) =$$

$$8(x + 2) =$$

$$8(x - 2) =$$

$$11(5x + 2) =$$

$$6(x + 4) =$$

$$6(x - 4) =$$

$$-2(3x + 1) =$$

$$(x + 3)4 =$$

$$(x - 3)4 =$$

$$6(2x - 3) =$$

$$(x + 9)7 =$$

$$(x - 9)7 =$$

$$5(5x - 2) =$$

$$-3(x + 1) =$$

$$(x + 1)(-3) =$$

$$(3x - 10)(-5) =$$

$$5(x^2 + 6) =$$

$$(x^2 - 6)5 =$$

$$(2x^2 + 1)(-3) =$$

Simplify.

$$8 + 3(x + 2)$$

$$8 + 3x + 6$$

$$3x + 14$$

$$x + 4(x - 6)$$

$$5(2x - 3) + 14$$

$$-2(x + 7) + 12x$$

$$x + 3(x - 4) + 2x$$

$$5x^2 + 3(x^2 - 1)$$

$$10a + 2(a + 9) + 25$$

$$5y + (x - 4)(-7)$$

$$x + 2(x + 1) + x^2$$