

Section 1: Distributive Property with variables

When applying the *Distributive Property*...

You want to take the number on the **outside** of the parentheses and multiply it with *every* number located **inside** the parentheses.

• **Example 1**

$$\begin{aligned} & 5(4 + 6) \\ &= (5 \cdot 4) + (5 \cdot 6) \\ &= 20 + 30 \\ &= \mathbf{50} \end{aligned}$$

• **Example 2**

$$\begin{aligned} & 2(8 - 3) \\ &= (2 \cdot 8) - (2 \cdot 3) \\ &= 16 - 6 \\ &= \mathbf{10} \end{aligned}$$

Dealing with Variables.

The *distributive property* can be applied when **variables** are involved.

A **variable** is just a letter that stands for a number.

Example

$$\begin{aligned} & 6(n + 5) = (6 \cdot n) + (6 \cdot 5) \\ &= \mathbf{6n + 30} \end{aligned}$$

Guided Practice Apply the *distributive property* to create an **equivalent** expression

$$11(a - 4)$$

$$\mathbf{11a - 44}$$

$$(x + 3) 9$$

$$\mathbf{9x + 27}$$

$$6(2k + 7)$$

$$\mathbf{12k + 42}$$

You Try Apply the distributive property to create an equivalent expression.

$$3(x + 5)$$

$$\mathbf{3x + 15}$$

$$(w + 2) 6$$

$$\mathbf{6w + 12}$$

$$3(5p - 4)$$

$$\mathbf{15p - 12}$$