

## Using the Distributive Property Class Work

🦋 **You will be able to...** expand algebraic expressions by applying the distributive property.

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### ★ The Distributive Property

The distributive property says that for any real numbers,  $a$ ,  $b$ , and  $c$ ,

$$a(b + c) = ab + ac \quad \text{and} \quad a(b - c) = ab - ac$$

🦋 Let's show that this works for some real numbers!

1. Is  $3(4 + 7)$  the same as  $3 \cdot 4 + 3 \cdot 7$ ? Prove it.

2. Is  $2(5 + 10)$  the same as  $2 \cdot 5 + 2 \cdot 10$ ? Prove it.

3. Is  $-4(2 + 1)$  the same as  $-4 \cdot 2 + -4 \cdot 1$ ? Prove it.

🦋 Now let's try this with some algebraic expressions.

**Example:** Expand  $-2(3x + 4)$ .

**Now You Try!** Expand  $3(2y - 5)$ .

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 Practice! Expand each expression.

1.  $6(x - 9)$

2.  $-2(4f + 5)$

3.  $-(3x + 10)$

4.  $5(8h - 3)$

5.  $3(2x + 5)$

6.  $-7(x + 4)$

7.  $2(2x + 3y - z)$

8.  $9(3w - 2r + 7)$

9.  $4(8s - 2b - 12)$

10.  $-2(4c + 3d - 22)$

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~ Something important to remember when using the distributive property is...