

TOPIC: THE DISTRIBUTIVE PROPERTY

The Distributive Property

◆ The *distributive property* allows us to *distribute* multiplication into parenthesis.

New

Distributive Property of Multiplication

$$a(b + c) = \underline{\hspace{1cm}}b + \underline{\hspace{1cm}}c$$

Using Order of Operations: $2(4 + 5) = 2(9) =$

Using Distributive Property $2(4 + 5) =$

◆ Since multiplication is commutative, $a(b + c) = (b + c)\underline{\hspace{1cm}}$.

EXAMPLE

Use the distributive property to write each expression without parenthesis.

(A) $4(x - 8)$

(B) $(4x + 2y - 7z)3$

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PRACTICE

Use the distributive property to simplify the expression.

(A) $7(3 + 2)$

(B) $-4(6 + 1)$

EXAMPLE

Use the distributive property to simplify the expression.

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

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PRACTICE

Use the distributive property to simplify the expression.

(A) $\frac{1}{4}(8 - 12)$

(B) $0.6(-8x + 2.5)$

(C) $x(x + 5)$

(D) $x(2x + 7y)$

EXAMPLE

Apply your knowledge of the distributive property to write the following *with* parenthesis.

(A) $91 \cdot m + 91 \cdot n = \underline{\hspace{1cm}}(m + n)$

(B) $4 \cdot x - 4 \cdot y$