

11-8-18

Aim: SWBAT begin simplifying expressions using the Distributive Property.

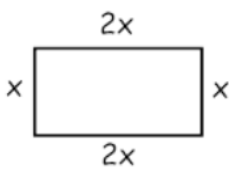
HW: Packet Page 7

Quiz Tuesday (Packet Pages 1 - 10)

Do Now: Packet Page 5

HOMWORK

Simplify each expression by combining like terms.

	A	B	C
7	$4a + 3a$ $7a$	$-9x + 2x$ $-7x$	$-6x^2 - 3x^2 - 4x - 9x$ $-9x^2 - 13x$
8	$-5m - m + 7$ $-6m + 7$	$13xy - 17 + 1xy - 1$ $14xy - 18$	$4a - 3c - 7a - 3c$ $-3a - 6c$
9	$4x + 7y + 11x + 8z$ $15x + 7y + 8z$	$7x + 11xy + 1x + 9$ $11xy + 8x + 9$	$1mn + 4m + 6n + 2mn$ $3mn + 4m + 6n$
10	<p>Find the perimeter of the rectangle in simplest form. (Remember, perimeter is the distance around the outside of a polygon.)</p>  <p> $P = 2x + x + 2x + x$ $P = 6x \text{ units}$ </p>		

Aim: SWBAT begin simplifying expressions using the Distributive Property.

Do Now:

A) If there are like terms, circle them. If there are not, circle "none".

1. $15x + 5 + 3x - 6y$ none 2. $3a + 7ab + 4a - 8b$ none
 3. $6r - 8 + 12s + 5$ none * 4. $12mn + 11 + 22nm$ none
 5. $4xy + 6x + 8y$ none $22mn$

B) Complete the table by listing the specific parts of each expression.

Expression	$3x + 4x + 2$	$5y + 9z - 7 - 3y$
Terms	$3x, 4x, 2$	$5y, 9z, -7, -3y$
Like Terms	$3x$ and $4x$	$5y$ and $-3y$
Coefficient(s)	3 and 4	$5, 9, -3$
Constant(s)	2	-7

The Distributive Property

The **Distributive Property** lets you multiply a sum by multiplying each addend separately and adding their products.

- To multiply larger numbers mentally, one number breaks into two numbers to complete the process.

$$\begin{aligned}
 &15(26) \\
 &15(20 + 6) \\
 &15 \cdot 20 + 15 \cdot 6 \\
 &300 + 90 \\
 &390
 \end{aligned}$$

- In algebraic expressions, the Distributive Property is used to eliminate parentheses often leaving a sum or difference that cannot be simplified any further.

$$a(b + c) = ab + ac$$

$$a(b - c) = ab - ac$$

Simplifying an Expression requires a two-step process in a specific order.

Step 1: Eliminate parentheses by distributing

Step 2: Combine like terms

Answers also have requirements. Most often, answers should be in standard form. That means...

- No double signs
- Terms are in alphabetical order
- The constant is last

Use the Distributive Property to simplify.

Distributing a Positive	Distributing a Negative
All the signs in the answer are the <u>same</u> as the signs in the parentheses.	All the signs in the answer are the <u>opposite</u> of the signs in the parentheses.
$3(x + 10) = 3x + 30$	$-3(x + 10) = -3x - 30$
$12(-y + z) = -12y + 12z$	$-12(-y + z) = 12y - 12z$
$5(x - y + 3) = 5x - 5y + 15$	$-5(x - y + 3) = -5x + 5y - 15$
$10(x - 5) = 10x - 50$	$-10(x - 5) = -10x + 50$
$x(-a - b) = -ax - bx$	$-x(-a - b) = ax + bx$
$3(2x + 10) = 6x + 30$	$-3(2x + 10) = -6x - 30$
$12(-2y + 2z) = -24y + 24z$	$-12(-2y + 2z) = 24y - 24z$
$5(2x - 2y + 3) = 10x - 10y + 15$	$-5(2x - 2y + 3) = -10x + 10y - 15$
$10(2x - 5) = 20x - 50$	$-10(2x - 5) = -20x + 50$
$x(-a - 2b) = -ax - 2bx$	$-x(-a - 2b) = ax + 2bx$
	$-(x - 2y) = -x + 2y$
	$-(3x + 8y - 10) = -3x - 8y + 10$

HOMEWORK

Given the expression: $9x^2 + 11x - 12 - 5x^2 + 3x - 8$

- 1) How many terms are in this expression? _____
- 2) State the coefficient of the fourth term. _____
- 3) State the coefficient of the second term. _____
- 4) Name the constant term(s). _____
- 5) State a like term for the first term. _____
- 6) State a like term for the second term. _____
- 7) State a like term for the third term. _____

What are the steps to simplifying an expression?

Step 1) _____

Step 2) _____

Simplify each expression by using the Distributive Property.

1) $7(n + 6) =$ _____ 2) $5(3x + 12) =$ _____ 3) $6(5y - 10) =$ _____

4) $4(x - y) =$ _____ 5) $12(x - 7) =$ _____ 6) $7(9x + 4y) =$ _____

7) $-2(-3 + 5x) =$ _____ 8) $-5(6x - 3) =$ _____ 9) $-7(7 + 2y) =$ _____

10) $-(8x + 11) =$ _____ 11) $-(6x - 3) =$ _____ 12) $-(-7 + 2y) =$ _____

13) $-7(x - 8) =$ _____ 14) $9(2x + 8) =$ _____ 15) $-3(-8x + 12) =$ _____

16) $5(-8x + 10) =$ _____ 17) $y(4x - 7) =$ _____ 18) $-(6x - 13) =$ _____

19) $5(-3x + 10y - 7) =$ _____ 20) $-8(6x + 9y + 3z) =$ _____