11-8-18

Aim: SWBAT begin simplifying expressions using the Distributive Property.

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Quiz Tuesday (Packet Pages 1 - 10)

Do Now: Packet Page 5

HOMEWORK

Place each pair of terms into the appropriate column.

x and 15x n^2 and $5n^2$ 18xy and 22xz 12 and 15

8 and 9 22mn and 12mn 17n and $33n^3$

LIKE TERMS	UNLIKE TERMS
x and 5x 22mn and 12mn 8 and 9 12 and 15 n^2 and $5n^2$	18xy and 22xz 17n and $33n^3$

Given the expression: 12y + 21x + 15 − 5y + 2x − 9

1) List the 6 terms 12y, 21x, 15, -5y, 2x, -9

2) List the 4 coefficients 12, 21, -5, 2

3) List the constant(s) 15 and -9

4) A like term for the first term -5y

5) A like term for the second term 2x

6) A like term for the third term -9

Given the expression: 14n + 29 + 13s − 22 − 3s + 4n

7) How many terms are in this expression? 6

8) List the constant(s) 29 and -22

9) A like term for the first term 4n

10) A like term for the second term -22

11) A like term for the third term -3s

12) State the coefficient of the third term 13

13) State the coefficient of the fifth term -3

14) State the coefficient of the first term 14

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 — 22mn
5. 4xy + 6x + 8y — none

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.

  15(26)

  15(20 + 6)

  15·20 + 15·6 = 390

  300 + 90

- **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**

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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.**
$3(x + 10) = 3x + 30$	$-3(x + 10) = -3x - 30$
$12(-y + z) = -12y + 12z$	$-12(-y + z) = 12y - 12z$
$5(x - y + 3) = 5x - 5y + 15$	$-5(x - y + 3) = -5x + 5y - 15$
$10(x - 5) = 10x - 50$	$-10(x - 5) = -10x + 50$
$x(-a - b) = -ax - bx$	$-x(-a - b) = ax + bx$
$3(2x + 10) = 6x + 30$	$-3(2x + 10) = -6x - 30$
$12(-2y + 2z) = -24y + 24z$	$-12(-2y + 2z) = 24y - 24z$
$5(2x - 2y + 3) = 10x - 10y + 15$	$-5(2x - 2y + 3) = -10x + 10y - 15$
$10(2x - 5) = 20x - 50$	$-10(2x - 5) = -20x + 50$
$x(-a - 2b) = -ax - 2bx$	$-x(-a - 2b) = ax + 2bx$
	$-(x - 2y) = -x + 2y$
	$-(3x + 8y - 10) = -3x - 8y + 10$

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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) $-8(6x + 9y + 3z) =$ _____