Unit 4: Variable Expressions | Name: _____

Lesson 1: Combining Like Terms | Hour: Key

Notes 4.1

Number Properties

Works for * and ÷ only

Commutative Changes the order	$x + y = x + y$ $x \cdot y = y \cdot x$
Associative Changes the groupings	$(a+b)+c = a+(b+c)$ $(a \cdot b) \cdot c = a \cdot (b \cdot c)$

Why do we need to remember these properties for combining like terms?

Combining Like Terms

How many terms?

$$-6x + 7y + x^2 - 2xy - 5x - 3y + 8x^2 - 4y + 8xy - 10x$$

What are the "like" terms?

$-6x \quad -5x \quad -10x \rightarrow -21x$

$+7y \quad -3y \quad -4y \rightarrow 0$

$+x^2 \quad +8x^2 \rightarrow 9x^2$

$-2xy \quad +8xy \rightarrow 6xy$

What does simplify mean?

to combine all like terms

Simplified:

$$\boxed{-21x + 9x^2 + 6xy}$$

Simplify the Expression

1) 2 apples + 3 bananas + 4 apples + 5 grapes + 8 banana − 3 apples

3apples + 11 bananas + 5 grapes

2) $-12x(-5) + 6x - 12 + 2$

$-6x - 15$

3) $-|-8| + |10| + |-12| - 5|-3|$

$-8 + 10 - 12 - 15 = -1$

4) $-2x^2 + 3xy - 4x - (-6x^2) - 8xy + 3 - 8xy + 3 - 8x + x - 4 - y + 10x^2$

$14x^2 - 13xy - 11x - y + 2$

5) $16x - 3x - 9 + -8x + 24$

$5x + 15$

6) $10 + 12x + 24 + 2x - (-8) - 4x + 7 - x - (-7)$

$9x + 56$

7) $10a + b - 5 - 4b + 6a - 7 + 3 - 14a$

$2a - 3b - 9$

Homework: What is the World's Saddest Candy? Wkst.

Adapted: What is the World's Saddest Candy wkst. (#1-10 only)