AIM: 2-6 I will be able to simplify expressions by *combining like terms*!

Name _____ Date _____

Mrs. Ashley Math 6 - Period _____

Warm-up: Evaluate the numerical expressions below using order of operations (GEMDAS). Show ONE operation per line!

a) Find the value of:

$2(10 - 7)^2 - (12 \div 6)^4$

$2 \cdot 3^2 - (12 \div 6)^4$

$2 \cdot 3^2 - 2^4$

$2 \cdot 9 - 2^4$

$2 \cdot 9 - 16$

$18 - 16$

2

b) What is the value of the expression $5g^2$ when $g = 1.5$?

$5 \cdot 1.5^2$

$5 \cdot 2.25$

11.25

$5 \cdot g^2$

$1.5 \times 1.5 = 75 + 150 = 2.25$

$2.25 \times 5 = 11.25$

Let's Investigate: To combine like terms, we add or subtract items that are the same to make a simplified shorter list of items.

*__Like Terms__ have the same variable and the same exponents.

*__Recall__: A __coefficient__ is the number in front of the variable! ex: $5x$

Place the terms in the correct columns below. Which ones are **ALIKE** and **UNLIKE**?

$5x$ $3x^2$ $17x$ $17y$ $10x$

LIKE TERMS	UNLIKE TERMS
$5x$	$3x^2$
$17x$	$17y$
$10x$	

Consider the following fast-food order:

 = 1 Burger, B  = 1 Fry, F  = 1 Soda, S

- Can you represent the fast-food order as an **algebraic expression**?

2B + 1F + 1S + 3B + 2F + 2S

2B + 3B → 5B

1F + 2F → 3F

1S + 2S → 3S

- If we were to organize the meal above, which items would go together?
  We can rewrite the expression below by **combining like terms**.
  (Use different shapes or colors to group the like terms!)

5B + 3F + 3S

- If we combine like items, we get the simplified order below.

5B + 3F + 3S

KEY CONCEPT: Combining 'Like Terms'

** Highlight or draw different shapes around the LIKE TERMS

** Always include the SIGN in front of the term. (+ or -) $-2x$

** ADD or SUBTRACT the coefficients of the LIKE TERMS
(The number in front of the variable) $5x + 6x = 11x$

** x is the same as $1x$ or 1 times x

$$1x = 1 \cdot x = x$$

Examples: Write an equivalent expression (simplify)!

a) $4x + 5 - 3x + 7$

$4x - 3x$ $\quad 5 + 7$

$1x$ $\quad 12$

$x + 12$

b) $4y - 1y$

$3y$

Now You Try! *Partner Practice* - Write an equivalent expression (simplify)!

1) $1x+1x+1x+1x+1x$ $5x$	2) $4x+2+9x+8$ $4x+9x \quad 2+8$ $13x+10$ $13x+10$
3) $4.8+2.2w-1.4w+2.4$ $7.2+0.8w$ $0.8w+7.2$ $4.8+2.4=7.2$ $2.2-1.4=0.8$	4) $7x-2-7x+6$ $7x-7x \quad -2+6$ $0+4 \quad 6-2$ 4
5) $8p+5-5p+10$ $8p-5p+5+10$ $3p+15$	6) $3k+1k-4k$ $4k-4k$ 0
7) $1x^2+5x+3x^2-2x$ $1x^2+3x^2+5x-2x$ $4x^2+3x$	8) $8g^3-3-2g^3-2g^2+11$ $8g^3-2g^3-3+11-2g^2$ $6g^3+8-2g^2$