

Chapter 5 and 7 - Polynomials

LESSON 2: EQUIVALENT EXPRESSIONS

Review of Lesson 5.1

Expression	# of Terms	Name	# of Variables	Degree	Coefficient of First Term	Constant Term
$4x^2 - 5y + 8$						
$-6x^3y^3z$						
$-x^3 - 2x^2 + 5x - 8$						
$8x^2y^6 - 4x^3yz^2$						
$5x^2 + 7x - 3 - 5 + 8x$						

An algebraic expression is made up of terms.

- Each term can have any number of variables, and each variable has an exponent.
- A constant term has no variable

Like terms: terms with the same variables raised to the same exponents

- Like terms can have different numerical coefficients
- Like terms can be combined by adding or subtracting

Ex:

- Unlike terms CANNOT be combined.

Ex:

Ex.1: For each expression, identify the coefficient(s), the variable(s) and the exponent of each variable.

Term	Coefficients	Variables	Variables' Exponents
$6p^2$			
$-x^2y$			
$-3x^4y^2z$			
$4x^2 - 5y + 8$			
b			

Ex.2: Circle the like terms in each group.

a) $4x, 4y, x^2, -x, y^2$

b) $6, 2x, -2.5, 3y, -0.1$

c) $a, 4b, -3ab, 7a, 1.5a$

d) $-f, 3ef, f^2, -6f^2, 5e$

e) $6s^2t, -10s, \frac{3}{4}st^2, -ts^2, t$

f) $\frac{2}{5}, \frac{1}{2}r, 0.12, r^2, 9$

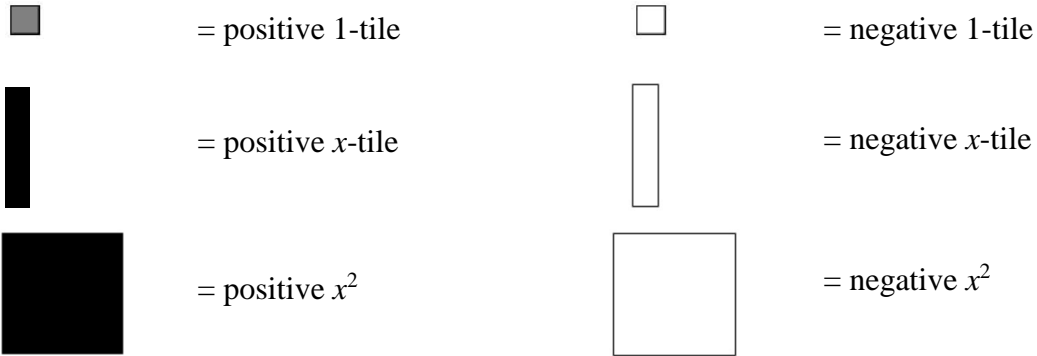
g) $0.5jk, -jk, j^2, 6jk, -k$



h) $pq, -0.6p^2, 5q, -p^2, 10p^2$





Combining Like Terms

When combining like terms, the sign must go with the term that follows it. Arrange your answers in descending order of degree (from highest degree term to lowest degree).

Using a Model: You can use algebra tiles to represent each term.



 and  have a combined value of zero – they are called a zero pair.

The same is true for:  and  and  and 

When combining like terms, group the tiles together to form zero pairs and remove them. Then write an expression for the remaining tiles.

Ex.3: Use a model to combine the like terms in the expression $2x^2 + 3x + x^2 - 4 - 4x + 2$



Ex.4: Combine the like terms in each expression

a) $3m - m^2 - 6 + 3m^2$

b) $-4k - k^2 + 5k - 7k^2 + 8$

c) $-c - c^2 + 3c + c^2$

d) $7 - 10 + 5n - n + 9 + 8n$

e) $-2b^2 - 7b + 3b^2 - 8b + b$

f) $w^2 - 3w - 8w^2 + 7w^2 + 10w$

g) $-2a - 1 - a - 7 - 5a$

h) $3s + 6 - 6s^2 - 8 + 7s - 2s^2$