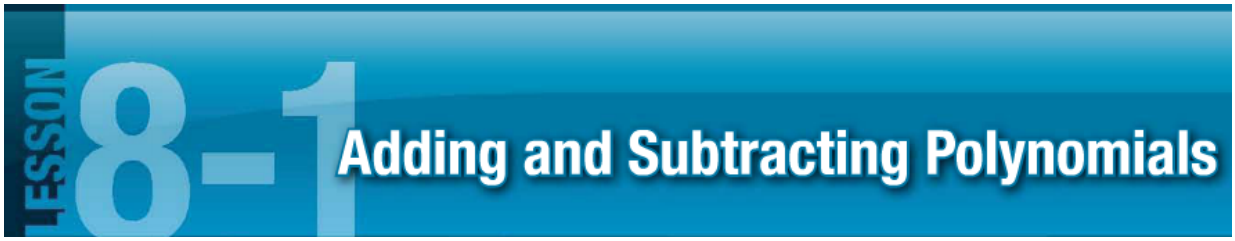

I can...write polynomials in standard form, name leading coefficient, name degree and perform addition and subtraction on polynomials.

New Seats

Five minutes - match vocabulary warm up!

Erase to uncover answers

e	1. Term	a. Number in front of a variable
c	2. Constant	b. A letter
a	3. Coefficient	c. a number that is by itself
b	4. Variable	d. Two or more terms that have the same variables/exponents or two terms that have no variables.
h	5. Exponent	e. A number, a variable or the product of a number and a variable.
d	6. Like terms	f. 1
g	7. Expression	g. Shows a mathematical relationship. The difference between this and an equation is that there is no solution to this.
f	8. Exponent if none shown is?	h. Raised to the power of

Monomial (term)

The product of a number and one or more variables with non negative integer exponents.

No Negative Exponents

No Add and Subtract

No dividing by a variable

Bases don't repeat

Examples/Non-Examples

7 x^5 $\frac{9x}{y}$ $17 - c$

$8f^2g$ $3c^5$

a^2b^4 $9xy^{-2}$

$\frac{3}{4}p^2q^7$

Binomial

The sum or difference of two monomials.

Examples/Non-Examples

$2x^2 + 7$

$7x + y^2$

$x - 5$

$\frac{2}{x^2} - x$

$\sqrt{x} = x^{\frac{1}{2}}$

$x^2 + 5x - 3$

Trinomial

The addition or subtraction of three monomials.

Examples/Non-Examples

$2xy2+3xy-7$

x^2+3x-7

$2xy$

$x-3$

$\sqrt{x}$

Polynomial

The addition and subtraction of monomials.

a. $6x - 4$ ✓

b. $x^2 + 2xy - 7$ ✓

c. $\frac{14d + 19e^3}{5d^4}$ NO

d. $26b^2$ ✓

$8r - 5s$ $3x^2 + 2y + z$

$3y^5$ $4a^2 - b^{-2}$

Classify the above expressions.

If it is a polynomial, identify it as a *monomial, binomial,* or *trinomial*. Write it in with your examples/non-examples.

Degree of Monomial:

The sum of exponents of all of its ~~variables~~

a^2b^4 6th degree

7 Deg 0

$3c^5$ 5th deg.

$\frac{3}{4}p^2q^7$ 9th Deg.

$8f^2g^1$ 3rd Deg

x^5

You Try. Name the degree of each monomial.

1. $3x^2y^1$ 3rd deg
2. 4 0 deg
3. $2^2x^3yz^5$ 9th deg

Degree of a Polynomial:

The degree of the TERM with the greatest degree

$+9x^2 + 3x^6 - 4x$ (2, 6, 1) 6th Deg

Find the degree of each term.
The largest one is the degree of the entire polynomial.

Standard Form

Highest Degree to Lowest

$3x^6 + 9x^2 - 4x$

Leading Coefficent ⟷ Number in Front of highest Degree

3

$+3x^3 + 4x^7 + 6x - 7 - x^2$

$4x^7 + 3x^3 - x^2 + 6x - 7$

LC: 4

Deg: 7

You Try

1. $12 + 5y + 6xy + 8xy^2$
2. $4x - x + 2x^3 + 5$

$2x^3+4x+5$ D:3 LC:2

Standard Form:

Degree:

Leading Coefficent:

Adding Polynomials

When adding or subtracting polynomials the exponents of each term DOES NOT CHANGE!

Erase to uncover words.

Adding and subtracting polynomials is also known as Combining Like Terms.

$3x + 2x$

$5x$

$5x \quad 2x^2$

$y^2 \quad y^3$

$3x^3y - 7xy^3$

$x^2 \quad y^2$

$x^2 \quad x^2$

Adding Polynomials

In order to combine like terms, when adding or subtracting polynomials, only add or subtract the coefficients (numbers that are in front of the variable) or the constants (the numbers that do not have a variable). ***You do not add or subtract the exponents.***

Example

$(7y^2 + 2y - 3) + (2 - 4y + 5y^2)$

$12y^2 - 2y - 1$

SUBTRACTING POLYNOMIALS

Distribute Subtraction ←·-·-·-→ Combine like terms

$(6y^2 + 8y^4 - 5y) - (9y^4 - 7y + 2y^2)$

$6y^2 + 8y^4 - 5y - 9y^4 + 7y - 2y^2$

$4y^2 - 1y^4 + 2y$

$-1y^4 + 4y^2 + 2y$

You Try $11n^3+n^2-2n+3$

1. $(6n^2 + 11n^3 + 2n) - (4n - 3 + 5n^2)$

2. $(3x^3 + 2x^2 - x^4) - (x^2 + 5x^3 - 2x^4)$

$3x^3+2x^2-x^4-1x^2-5x^3+2x^4$

$-2x^3+x^2+x^4$

$x^4-2x^3+x^2$

3. $(7n^2 + 12n^3 + 3n) + (4n - 3 + 5n^2)$ $12n^3+12n^2+7n-3$

4. $(2x^3 + 4x^2 - x^4) + (x^2 + 5x^3 - 6x^4)$ $6x^4-7x^3+5x^2$

Multiply Polynomials by Monomial

From chapter 7 we learned that when multiplying like bases add the exponents.

$+6y(4y^2 - 9y - 7)$

$+6y(4y^2)+6y(-9y)+6y(-7)$

$24y^3+-54y^2-42y$

2. $-3n^2(-2n^2 + 3n + 4)$

$-3n^2(-2n^2) - 3n^2(3n) - 3n^2(4)$

$6n^4 - 9n^3 - 12n^2$

Homework 8.1 & 8.2

8.1 Pg.468 #21-43o

8.2 Pg.475 #19-29o