Howdy!!!!

Coach Watson

FOA
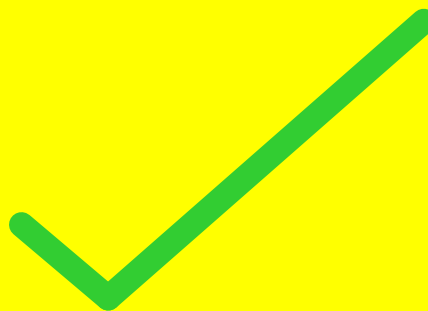
Find your seat

*Pencil

Rules
&
Guidelines

1. Be RESPECTFUL
2. Bathroom
3. Cellphones
4. No talking when we are talking
5. Food Policy

Transcript Check

Syllabus

Todays Notes

Algebra 1   Unit 7: Quadratic Expressions   Notes

Name: _____   Block: _____

Unit 7: Quadratic Expressions
Learning Goal 7.1 – Operations with Polynomials

In this unit, you will learn how to do the following:

Learning Target #1: Operations with Polynomials
- Classify polynomials by degree and terms
- Add polynomials
- Subtract polynomials
- Multiply polynomials
- Apply operations of polynomials to real world problems

Mon, 1/6 *Day 1:* Review Expectations, Classify Polynomials	Tues, 1/7 *Day 2:* Adding & Subtracting Polynomials	Wed, 1/8 *Day 3:* Multiplying Polynomials	Thurs, 1/9 *Day 4:* Applications with Polynomials	Fri, 1/10 **Learning Goal 7.1 Assessment**
Mon, 1/13 *Day 5:* Factoring Trinomials	Tues, 1/14 *Day 6:* Factoring Trinomials	Wed, 1/15 *Day 7:* Factoring Trinomials	Thurs, 1/16 *Day 8:* Factoring Practice Day	Thurs, 1/17 **Learning Goal 7.2 Assessment**

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Algebra 1   Unit 7: Quadratic Expressions   Notes

Day 1 – Classifying Polynomials

A **POLYNOMIAL** is a mathematical expression consisting of terms, which can include a constant, variable, or product of a constant and variable, that are connected together using addition or subtraction. Variables must have exponents raised to whole number exponents.

terms

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

leading term   constant term
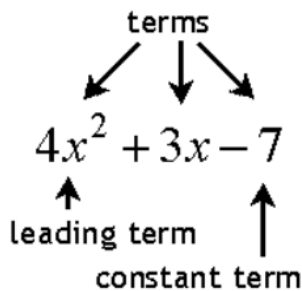
Number of Terms: _3_

Terms: _$4x^2$, $3x$, -7_

Coefficient(s): _4,   3_   # in front of variable (letter)

Constant(s): _-7_   # without variable

Polynomials CANNOT contain:
- Radicals ✓
- Fractional exponents
- Negative exponents
- No variables in the denominator

$$x^{\frac{1}{3}}$$

Cross off all expressions that are NOT polynomials:

~~$-8x^5 + 2x - 7$~~   ~~$6x^2 - 3x$~~

~~$\frac{1}{x^3}$~~   ~~$3x^4 - \sqrt{x}$~~

~~$-9 + x$~~   ~~$4x^2$~~

Polynomials are typically written in **STANDARD FORM**, which means the terms are arranged in decreasing order from the largest exponent to the smallest exponent. When you write polynomials in standard form, you can easily identify the degree of the polynomial. The **DEGREE** is the largest exponent of the variable in the polynomial.

Rewrite each polynomial in standard form. Then identify the degree of the polynomial:

a. $5x - 6x^2 - 4$

Standard Form:
$$-6x^{\boxed{2}} + 5x - 4$$

Degree: 2

b. $-7x + 8x - 2 - 8x^2$

Standard Form:
$$-7x^{\boxed{1}} - 2$$

Degree: 1

c. $6(x - 1) - 4(3x^2) - x^2$

$$6x - 6 - 12x^2 - 1x^2$$

Standard Form:
$$-13x^{\boxed{2}} + 6x - 6$$

Degree: 2

Algebra 1   Unit 7: Quadratic Expressions   Notes

Classifying Polynomials

Polynomials are classified by **DEGREE** and **NUMBER OF TERMS**:

Degree: highest exponent

Number of term: seperated by + or − how many things listed

Degree	Name	Example
0	Constant	2 (no x)
1	Linear	$2x + 4$
2	Quadratic	$3x^2 + 2x + 4$
3	Cubic	$5x^3 + 2x$

Terms	Name	Example
1	monomial	-10
2	binomial	$3x + 8$
3	trinomial	$4x^2 + 3x + 8$
4+	polynomial	$5x^3 + 4x^2 + 3x + 8$

Complete the table below. Simplify the expressions or put in standard form if necessary.

degree / # of terms

Polynomial	Degree	# of Terms	Classification
$8x$	1	1	linear monomial
$x^2 - 4$	2	2	quadratic binomial
10	0	1	constant monomial
$-24 + 3x - x^2$ $-x^2 + 3x - 24$	2	3	quadratic trinomial
$5x^3 - 12 + 8$ $5x^3 - 4$	3	2	cubic binomial
$7x - 9x + 1$ $-2x + 1$	1	2	Linear binomial
$4x^2 - 5x^3 - 4 + 5x - 1$ $-5x^3 + 4x^2 + 5x - 5$	3	4	cubic polynomial
$-2x + 3 - 7x^2 + 4x + 7x^2$ $6x + 3$	1	2	Linear binomial

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Additional Practice

Algebra 1   Unit 7: Quadratic Expressions   Practice
Day 1 – Classifying Polynomials   **Name:** _____

Practice Assignment   **Date:** _____ **Block:** _____

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1. *Simplify and put each polynomial into standard form (if necessary). Then classify the polynomials by degree and number of terms.*

<table>
<tr><td></td><td>**Standard Form**</td><td>**Classification**</td></tr>
<tr><td>a. $4x^2 - 5x$</td><td>_____</td><td>_____ _____</td></tr>
<tr><td>b. $x + 2$</td><td>_____</td><td>_____ _____</td></tr>
<tr><td>c. 12</td><td>_____</td><td>_____ _____</td></tr>
<tr><td>d. $5x^2 - 5x + 1$</td><td>_____</td><td>_____ _____</td></tr>
<tr><td>e. $2x + 3x^2 - 4x$</td><td>_____</td><td>_____ _____</td></tr>
<tr><td>f. $4x^3 + 1 - 2x$</td><td>_____</td><td>_____ _____</td></tr>
<tr><td>g. $x^2 - 2x + 9 - x^2$</td><td>_____</td><td>_____ _____</td></tr>
<tr><td>h. $4x^3 - 2x + 2x^2 - 2x + 5$</td><td>_____</td><td>_____ _____</td></tr>
</table>

2. *Create a polynomial that meets the following requirements:*

a. Quadratic Trinomial with coefficients of -2 and 3:   _____

b. Quadratic Monomial with a negative coefficient: _____

c. Polynomial of degree 3 with three terms: _____

d. Polynomial with a constant of 7 and two terms: _____

e. Cubic binomial with leading coefficient of 4:   _____