

A1 S2 w4d2 8-1 Adding and Sub Polynomials

Alg I Week 4 Tues

Warm Up

1. Skill 10: Solve a System of Linear Equations Algebraically

Solve and check your answer.

Check:

$$3x + 2y = -9$$

$$-10x + 5y = -5$$

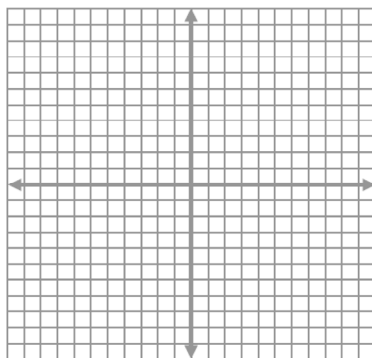
2. Skill 11: Solve a System of Linear Inequalities by graphing.

Solve and check, graphing only the solution.

A $6x - 5y < 15$

B $x + 2y \geq 8$

Check: _____



3. Skill 12: Simplify an Exponential Expression

Simplify, leaving no negative exponents

$$\frac{5(x^8)^0}{(x^5)^2 x^{-6} x^0}$$

4. Diamond Problems:

$$\begin{array}{c} \diagup \quad \diagdown \\ +11 \quad +1 \\ \diagdown \quad \diagup \end{array}$$

$$\begin{array}{c} \diagup \quad \diagdown \\ -56 \quad -1 \\ \diagdown \quad \diagup \end{array}$$

$$\begin{array}{c} \diagup \quad \diagdown \\ -14 \quad +10 \\ \diagdown \quad \diagup \end{array}$$

$$\begin{array}{c} \diagup \quad \diagdown \\ -64 \quad 0 \\ \diagdown \quad \diagup \end{array}$$

$$\begin{array}{c} \diagup \quad \diagdown \\ +8 \quad 28 \\ \diagdown \quad \diagup \end{array}$$

$$\begin{array}{c} \diagup \quad \diagdown \\ 63 \quad 16 \\ \diagdown \quad \diagup \end{array}$$

8-1 Adding and Subtracting Polynomials

Definitions:

monomial: a real number, a variable, or a product of numbers and variables

degree of a monomial: the sum of the exponents of its variables

Problem 1 Finding the Degree of a Monomial

What is the degree of each monomial?

A $5x$ Degree:

B $6x^3y^2$ Degree:

C 4 Degree:

You can add or subtract monomials by adding or subtracting like terms. Remember that like terms must have the same variables with the same exponents.

Problem 2 Adding and Subtracting Monomials

What is the sum or difference?

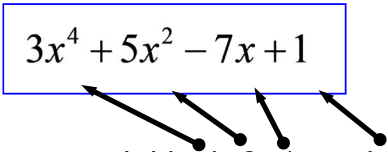
A $3x^2 + 5x^2 = 8x^2$

B $4x^3y - x^3y = 3x^3y$

More Definitions:

Polynomial a monomial or a sum of monomials

The following polynomial is the sum of the monomials $3x^4$, $5x^2$, $-7x$, and 1

$$3x^4 + 5x^2 - 7x + 1$$


The degree of each monomial is 4, 2, 1, and 0. This polynomial is in **standard form**. This means that the degrees of its monomial terms decrease from left to right. The **degree of a polynomial** is the same as the monomial term with the highest degree. The degree of this polynomial is 4.

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You can classify a polynomial based on its degree, and by the number of monomial terms it contains.

Polynomial	Degree	Name Using Degree	Number of Terms	Name Using Number of Terms
6	0	Constant	1	Monomial
$5x + 9$	1	Linear	2	Binomial
$4x^2 + 7x + 3$	2	Quadratic	3	Trinomial
$2x^3$	3	Cubic	1	Monomial
$8x^4 - 2x^3 + 3x$	4	Fourth degree	3	Trinomial

Problem 3 Classifying Polynomials

Write each polynomial in standard form. What is the name of the polynomial based on its degree and number of terms?

A $3x + 4x^2$

B $4x - 1 + 5x^3 + 7x$

Problem 5 Subtracting Polynomials

What is a simpler form of $(x^3 - 3x^2 + 5x) - (7x^3 + 5x^2 - 12)$?

Got It? 5. What is a simpler form of $(-4m^3 - m + 9) - (4m^2 + m - 12)$?

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Algebra 1, Wk 3, Tues Adding and Subtracting Polynomials #1

Add or subtract as indicated. Put in standard form.

1. $(4x^2 + 8x - 8) + (3x^2 + x - 8)$

2. $(x^2 - 4x + 4) - (3x^2 + x - 8)$

3. $(-4x^2 + x - 1) + (x^2 - 8x - 8)$

4. $(7x^2 - 8) + (4x - x^2 - 8)$

5. $(7x^2 + 2x + 3) - (3x^2 + 7x - 8)$

6. $(8x + 1) - (3x^2 + 7x + 4)$

7. $(4x^2 + 8x^2 - 8) + (x^2 + 5 - 8x)$

8. $(2x^2 + 7x) - (3x^2 - 4x + 2)$

9. $(4 - 8x - 2x^2) + (3x^2 + x - 8)$

10. $(5x - 8x^2) - (x - 8)$

11. $(-5x^2 + 8x + 3) - (x^2 - 7x - 3)$

12. $(4x^2 - 8) + (x - 8)$

13. $(3x^2 - 5x + 9) - (3x^2 + 5x - 9)$

14. $(4x^2 + 8x - 8) + (3x^2 + x - 8)$

15. $(4x^3 - 2 - 8x^2) + (3 + x^2 - 8x^3)$

16. $(4x^4 + 8x^2 - 8x) - (3x^3 + x^2 - 8)$

17. $(6x^3 + 9x - 1) + (3x^2 + 2x - 2)$

18. $(4x^3 - 2x) - (3x^2 - 2x)$