<u>Warm-up 1-13</u>

Classify the following expressions (give the degree and number of terms), write each one in standard form, and give the leading coefficient.

- 1. $14xyz^2 + 3x^7y^2 16$
- 2. 8 + k + $5k^4$
- 3. $5h^2 3h^3$
- 4. $9a^8 8a^9$
- 5. $3c^2 + 5c^4 + 5c^3 4$

<u>Warm-up 1-14</u>

Classify the following expressions (give the degree and number of terms), write each one in standard form, and give the leading coefficient.

1.
$$14xyz^{2} + 3x^{7}y^{2} - 16$$
 $3x^{7}y^{2} - 16$ Degree of 9
2. $8 + k + 5k^{4}$ $6x^{4} + K + 8$ Quartic Trinomial
3. $5h^{2} - 3h^{3}$ $-3h^{3} + 5h^{2}$ (ubic Binomial
4. $9a^{8} - 8a^{9}$ $3a^{9} + 9a^{8}$ Degree of 9 Binomial
5. $3c^{2} + 5c^{4} + 5c^{3} - 4$ $5c^{4} + 5c^{2} + 3c^{2} - 4$ Quartic Polynomial

Classifying Polynomials

Name by Degree	Degree	Examples	Number of Terms	Name by Terms
Constant	0	36)	Monomial
Linear)	14x + 2	2	binomial
Quadratic	2	$2x^2 + 3x - 1$	3	trinomial
Cubic	3	m ³ - 5	2	binomial
Quartic	Ц	8k ⁴ +5k ² -k+1	4	polynomial
Quintic	5	-9r ⁵ +5r ³ -7r ² +r+3	5	polynomial
Degree of 6	6	x ⁶ - 7x + 13	3	trinomial

Examples $x^{2} + (2x) + 3 + (7x)$ Quadratic Polynomial $x^{2} + 9x + 3$

<u>Iry These!!!</u>

Classify the polynomials below according to its degree and number of terms.

9. $4x^2 + 5x - 3$

10. $84x^4y^3 - 3x^2y^2$

<u> Try These!!!</u>

Put the polypomial in standard form and then classify the polypomials below according to its degree and number of terms. 10. 5x - 6

11. 15y - $84y^3$ + 100 - $3y^2$

12. $7a^{3}b^{4} - 2a^{4} + 4b - 15$

<u> Try These!!!</u>

Put the polynomial in standard form and then classify the polynomials below according to its degree and number of terms. 10. 5x - 65x - 6 Linear Binomial

11. $15y - 84y^{3} + 100 - 3y^{2}$ $-84y^{3} - 3y^{2} + 15y + 100$ Cubic Polynomial 12. $7a^{3}b^{4} - 2a^{4} + 4b - 15$ $7a^{3}b^{4} - 2a^{4} + 4b - 15$ Pegree of 7 Polynomial

Today's Goal

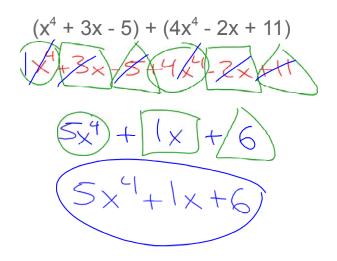
I can

- add polynomials
- subtract polynomials
- simplify polynomials

Section 8.29: Adding Polynomials

* Polynomial + Polynomial = Polynomial

Example:



Horizontal Method

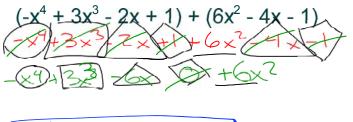
Step 1: Rewrite with out parenthesis

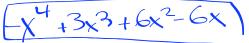
<u>Step 2</u>: Identify like terms (use shapes to help see the common terms)

Step 3: Combine like terms

Step 4: Write answer in standard form

More Examples



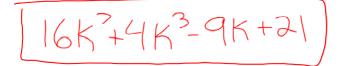




 $(3y^3 + 2x^2 - 7y + x + 14) + (-5x^3 + 8x^2 + 15y + 2)$

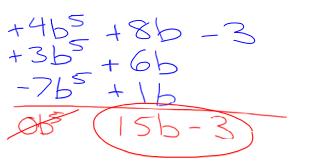


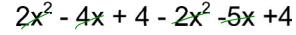
 $(16k^7 - 4k^3 - 10k + 21) + (8k^3 + k)$





$(4b^5 + 8b) + (3b^5 + 6b - 7b^5 + b - 3)$ $4b^5 + 8b + 3b^5 + 6b - 7b^5 + b - 3$





Vertical Method

Step #1: Rewrite the problem without parentheses

Step #2: Align like terms vertically (if a term does not have a like term use a 0 as a place holder)

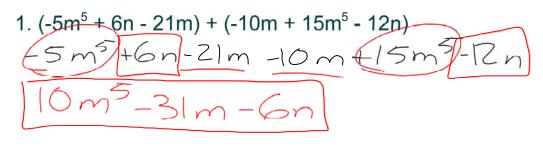
Step #3: Add

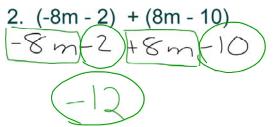
<u>Step 4</u>: Write answer in standard form

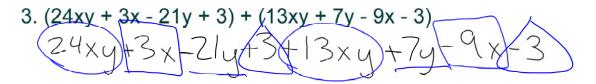
1. (-5m⁵ + 6n - 21m) + (-10m + 15m⁵ - 12n)

2. (-8m - 2) + (8m - 10)

3. (24xy + 3x - 21y + 3) + (13xy + 7y - 9x - 3)



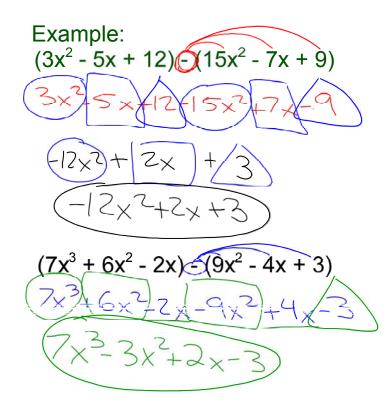




 $7\chi q - 6\chi - 12$

Section 8.2b: Subtracting Polynomials

* Polynomial - Polynomial = Polynomial



<u>Step 1</u>: Rewrite the first polynomial without the parenthesis

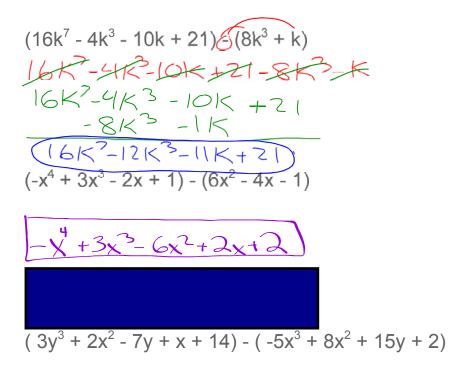
<u>Step 2:</u> Distribute the negative to the second Polynomial

Step 3: Identify like terms (use shapes)

Step 4: Combine like terms

Step 5: Write the answer in standard form

More Examples:



- 1. (-5m⁵ 6n 21m) (-10m + 15m⁵ 12n)
- 2. (-8m 2) (8m + 10)
- 3. (4xy + 3x 2y + 3) (-3xy + 7y 9x 3)

- 1. $(-5m^5 6n 21m) (-10m + 15m^5 12n)$ -20m⁵ + 6n - 1(m
- 2. (-8m 2) (8m + 10)-16m - 12
- 3. (4xy + 3x 2y + 3) (-3xy + 7y 9x 3)





pg. 265 #24-36 (even)