

January 6th - No warm up

Unit 7 Day 1 Practice

Name ney Date TW 1/5/17

Vocabulary with Polynomials

1. Rewrite the following polynomial in *standard form*: $5x - 4 - 3x^4 + 2x^2$

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

2. What is the *constant term* in the previous polynomial?

↳ plain #, no x -4

3. What is the *leading coefficient* of each of the following polynomials?

a. $2x^4 + 7x^2 - 18$
2

b. $-x^3 + 2x^2 - 5x + 13$
-1

4. What is the *degree* of the following polynomial: $-8x - 3x^5 + 10 + 6x^4$

↳ biggest exponent 5

5. Classify the polynomial by *number of terms* (give the word):

a. $2x^4 + 7x^2 - 18$
trinomial

b. $-5x + 13$
binomial

6. Classify the polynomial by *degree* (give the word):

a. $2x^2 - 3x + 8$
quadratic

b. $-5x^3 + 1$
cubic

7. C binomial

~~a.~~ A polynomial with only one term.

8. D standard form

~~b.~~ The number that does not multiply any power of x.

9. G leading coefficient

~~c.~~ A polynomial with two terms.

10. A monomial

~~d.~~ Written with terms in descending order, from largest degree to smallest degree.

11. F degree

e. A polynomial with four terms.

12. B constant term

~~f.~~ The value of the exponent in a polynomial.

13. H trinomial

~~g.~~ The number in front of the first term of a polynomial.

~~h.~~ A polynomial with three terms.

i. The first term of a polynomial.

Unit 7 Day 2

Notes

Adding and Subtracting Polynomials

Review: Classifying PolynomialsRewrite the following polynomials in **standard form**. (Exponents decreasing)

$$1) -9n^3 - 10n + 9 - 3n^2 \quad 2) -5 + 10x^2$$

$$-9n^3 - 3n^2 - 10n + 9 \quad 10x^2 - 5$$

Classify the following polynomials by degree and number of terms.

3) $-9x^3 - 2x^2$

degree: 3
 terms: 2

cubic binomial

4) $9x^2 + 10x - 10$

degree: 2
 terms: 3

quadratic trinomial

Adding Polynomials

There are a couple of different methods that you can use to add polynomials. You can either add vertically or horizontally. Before you add, be sure to make sure that both polynomials are in standard form.

We are going to add the following polynomials together using both methods. Then, you can decide which method you like best. $(4x^2 + 2x + 8) + (8x^2 + 3x + 1)$

a) Vertically

$$\begin{array}{r} 4x^2 + 2x + 8 \\ + 8x^2 + 3x + 1 \\ \hline 12x^2 + 5x + 9 \end{array}$$

b) Horizontally

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

$$12x^2 + 5x + 9$$

Using either method, add the following polynomials.

$$1) (5x^2 + 2x + 3) + (x^2 - x + 1)$$

$$6x^2 + 1x + 4$$

$$6x^2 + x + 4 *$$

$$2) (-10u^2 + 2u - 3) + (u^2 + 3u + 1)$$

$$-10u^2 + 2u - 3$$

$$+ 1u^2 + 3u + 1$$

$$\hline -9u^2 + 5u - 2$$

$$3) (81y^3 + 9y + 27) + (3y^2 - 9)$$

$$\left. \begin{array}{l} 81y^3 + 9y + 18 + 3y^2 \\ 81y^3 + 3y^2 + 9y + 18 \end{array} \right\}$$

$$4) (6x - 9x^2 + 4) + (2 + 10x^2)$$

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

$$10x^2 + 0x + 2$$

$$\hline 1x^2 + 6x + 6$$

Subtracting Polynomials

As with addition, there are a couple of different methods that you can use to subtract polynomials. The method that we are going to focus on is **distributing the negative to the second polynomial to turn the subtraction into addition.** Before you distribute, make sure both polynomials are in standard form. Then distribute the negative and add the polynomials together. You can add horizontally or vertically.

We will do two examples together.

$$1) (5x^3 + 3x^2 + 1) - (2x^3 - x^2 + 3)$$

$$(5x^3 + 3x^2 + 1) + (-2x^3 + 1x^2 - 3)$$

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

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

$$(7n^4 - 8n^3 + 7n) - (-6n^4 + 6n^3 + 1)$$

$$(7n^4 - 8n^3 + 7n) + (6n^4 - 6n^3 - 1)$$

$$13n^4 - 14n^3 + 7n - 1$$

Try the following on your own!

$$1) (10r^4 + 3r^2 + 11) - (r^3 + 3)$$

$$(10r^4 + 3r^2 + 11) + (-r^3 - 3)$$

$$10r^4 - r^3 + 3r^2 + 8$$

$$2) (-v^2 + 8v + 1) - (5v^2 + v + 1)$$

$$-5v^2 - v - 1$$

$$-(6v^2 + 7v)$$

$$3) (8r^3 + 8r^4 + 2r^2) - (7r^2 - 5r^4 - r^3)$$

$$13r^4 + 9r^3 - 5r^2$$

$$4) (2a - 3 + 2a^4) - (8a^3 - 8a^4 + 5a)$$

$$(2a^4 + 2a - 3) - (8a^4 - 8a^3 - 5a)$$

$$= 10a^4 - 8a^3 - 3a - 3$$