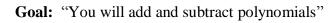
Name:		
Notes		

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Algebra Section 9.1 Pages 554-559





## **Vocabulary**

<b>Monomial:</b> a		, or the	of
a number and one or more variable with			
·			
Degree of a Monomial: The	of the		of the variables in the

Monomial	Degree
10	
3 <i>x</i>	
$\frac{1}{2}ab^2$	
$-1.8m^{5}$	

Not a Monomial	Reason
5 + <i>x</i>	
$\frac{2}{n}$	
4a	
x <sup>-1</sup>	

Ex: Monomial? Yes or no? Why? Why not? If yes, what is the degree?

**a.** 17

**b.**  $\frac{x^3}{2}$ 

**c.**  $\frac{5}{x}$ 

**d.**  $4x^2y^5z$ 

**e.** 9 + *x* 

f. 7<sup>b</sup>

g.  $y^{-3}$ 

**h.**  $\frac{3}{4}ab$ 

Polynomial: a_	or a sum of	Each is called a
	_•	
Binomial: A po	lynomial with	·
Trinomial: A po	olynomial with	
Degree of a Poly	ynomial: The	of its
Parts of a polyn	nomial: Note- the polynomial is written so that	at the exponents of a variable decrease from left to
right.	degree leading coefficient	constant

## Rewrite a polynomial:

Rewrite the polynomial so that the exponents of a variable decrease form left to right. Then state the leading coefficient, degree, and constant.

$$15x - x^3 + 3$$

When more than one variable is used, polynomials should be written in descending order, based on the variable that comes first alphabetically.

$$4ab^3 + 2a^3b - 5a^2b^4$$

Rewrite the following polynomials in descending order, based on the variable that comes first alphabetically.

**1.** 
$$15x - x^3 + 3$$

**2.** 
$$-xy + x^4y^2$$

$$3. -3ac^4 + a^2c^2 - a^3c$$

**4.** 
$$3b^3 - 4b^4 + b^2$$

**5.** 
$$7x^2y + 4xy^3 - 3x^3y^2$$

Ex: Classify each polynomial as a monomial, binomial, trinomial or polynomial, then find the degree of each.

1. 
$$2 + 4x - 7x^2$$

**2.** 
$$5xy^2$$

3. 
$$6a^2c + 5ac^5$$

**4.** 
$$5x^3 - 4xy^2 - 2x + 6$$

5. 
$$7b^3c + 4bc^4$$

**5.** 
$$7b^3c + 4bc^4$$
 **6.**  $6n^4 + 3n + 7x^8 - 4n^3$ 

**Adding Polynomials** – Same as adding like terms.

**Ex:** 
$$(2x^3 - 5x^2 + x) + (2x^2 + x^3 - 1)$$

**Ex:** 
$$(3x^2 + x - 6) + (x^2 + 4x + 10)$$

**Ex:** 
$$(-2x^2 + 3x - x^3) + (3x^2 + x^3 - 12)$$

**Ex:** 
$$(4x^3 + 2x^2 - 4) + (x^3 - 3x^2 + x)$$

**Subtracting Polynomials** - Distribute the negative first.

**Ex:** 
$$(4n^2 + 5) - (-2n^2 + 2n - 4)$$

**Ex:** 
$$(4x^2 - 3x + 5) - (3x^2 - x - 8)$$

**Ex:** 
$$(2c^2 - 8) - (3c^2 - 4c + 1)$$

**Ex:** 
$$(5y^2 + 2y - 4) - (-y^2 + 4y - 3)$$

## \*CHALLENGE\*

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