

9.1: Adding & Subtracting polynomials

Monomial: a #, variable, or
the product of a # & a
variable.

Degree of a monomial: Sum of
the exponent

Monomial	Degree
8	0
$4x^1$	1
$\frac{1}{4}ab^2$	3
$-3.7b^6$	6

Polynomial: a monomial or a sum of monomials, each called a term.

Degree of a polynomial: greatest degree of terms.

Leading Coefficient: When a polynomial is written so that the exponents of a variable decrease from $(L) \rightarrow (R)$, the coefficient of the first term

$$2X^3 + X^2 - 5X + 12$$

Annotations:

- term (under 2)
- term (under X^2)
- term (under $-5X$)
- term (under 12)
- of degree poly (next to 3)
- leading coefficient (arrow to 2)
- degree: 3 (under 3)
- 2 (under X^2)
- 1 (under $-5X$)
- 0 (under 12)

* My exponents are in descending order

* Each term separated by a "+" sign
if its a "-" it means + a -.

* Degree is 3 because it is the biggest degree of terms.

① Rewrite $15x - x^3 + 3$
so that's in descending
order

How many terms? 3

Leading Coefficient? -1

Degree? 3

$$-1 \cdot x^3$$

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

~~4x³ + 15x + 3~~

Binomial - a polynomial
with two terms

Trinomial - a polynomial
with three terms.

Add polynomials:

$$(\cancel{2x^3} + \cancel{5x^2} + \underline{x}) + (\underline{2x^2} + \cancel{x^3} + \underline{\underline{-1}})$$

* change - to +

$$3x^3 - 3x^2 + x - 1$$

$$(\cancel{4x^3} + \underline{2x} + \underline{\underline{1}}) + (\underline{\underline{-4x^2}} + \cancel{2x^3} + \underline{\underline{x}})$$

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