

# Polynomials

9.4

# Polynomial

- A **polynomial** is a monomial or sum of monomials.

• Monomial

Binomial

Trinomial

•  $3y^2$

$3y^2 + 3x^2$

$3y^2 + 3x^2 + 3z^2$

•  $2abc^2$

$2a + bc^2$

$2a + b - c^2$

# Degree of Monomial

- The degree of a monomial is the sum of the exponents of its variables.
- $8y^3$                           degree of 3
- $4y^2z^3$          $2+3=5$                       degree of 5
- $42ab^2c$      $1+2+1=4$                       degree of 4

# Degree of Polynomial

- The degree of a polynomial is the greatest degree of the polynomial.

$$3x^2 + 8a^2b - 4$$

Degrees of monomials:

2

3

0

Largest: 3

$$\bullet 7x^4 - 9x^2y^7 + 4xy^3$$

- $3x^2 + 8a^2b - 4$
- $7x^4 - 9x^2y^7 + 4xy^3$
- $18x^2 + 21xy^2 + 13x - 2abc$



- We try to arrange polynomials in descending order:

$$-4y^4 + 3y^3 + 2y + 12$$

- Try:  $14x + 2 - 3x^2 + 5x^3$