

Monomial → 10, 3x, $\frac{1}{2}ab^2$

Not a Monomial → 5+x

Reason: it is a sum, 2 terms

→ $\frac{2}{n}$

Reason: no variables in denominator

→ 4^a

Reason: no variable exponents

→ x^{-1}

Reason: no negative exponents

Polynomial: a monomial or a sum of monomials

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

Degree: Biggest exponent, 3

Leading Coefficient: # on term with degree, 2

Constant Term: # without variable, 12

Monomial: one term

Binomial: two terms

Trinomial: three terms

Ex1. Rewrite the following polynomial. Classify and state the leading coefficient, degree, and constant.

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

Standard Form: $-x^3 + 15x + 3$

Classify: Trinomial

Leading Coefficient: -1

Degree: 3, Cubic

Constant: 3

Tell whether the following are polynomials. If so, state the degree of the polynomial.

Ex2. A. 9 Yes or No: Yes Degree: 0, Constant

B. $2x^2 + x - 5$ Yes or No: Yes Degree: 2, Quadratic

C. $6n^4 - 8^n$ Yes or No: No Degree: _____

D. $m^{-3} - 2$ Yes or No: No Degree: _____

E. $7bc^3 + 4b^4c$ Yes or No: No Degree: _____

Name By Degree Can't mix variables

0: Constant

3: Cubic

6: Sextic

1: Linear

4: Quartic

7: Septic

2: Quadratic

5: Quintic

Ex3. Add the following polynomials. State the Degree and Leading Coefficient.

$$\underline{(9x^2 - 6x^3 + 3 - 11x)} + \underline{(7x^3 - 3x^2 + 4)}$$

$$x^3 + 6x^2 - 11x + 7$$

Degree: 3, Cubic

Leading Coefficient: 1

Subtract → ADD the Opposite!!!

Ex4. Subtract the following polynomials. State the Degree and Leading Coefficient.

$$\underline{(4x^2 + 5)} - \underline{(-2x^2 + 2x - 4)}$$

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

Degree: 2, Quadratic

Leading Coefficient: 6

Ex5. Subtract the following polynomials. State the Degree and Leading Coefficient.

$$\underline{(4a^2 - 3a + 5)} - \underline{(3a^2 - a - 8)}$$

$$a^2 - 2a + 13$$

Degree: 2, Quadratic

Leading Coefficient: 1

Ex6. Add the following polynomials. State the Degree and Leading Coefficient.

$$\underline{(9x^2 - 6x^3 + 3 - 11x)} + \underline{(7x^3 - 3x^2 + 4)}$$

Degree: _____

Leading Coefficient: _____

Homework: