

UNIT 1-Polynomials

Do Now: Simplify

a) $2a + 5b - 4a + 3b$

$-2a + 8b$

b) $10x + 5y$

cannot
combine

c) $3x^2 + x^2$

$4x^2$

d) Distribute: $-(3x^2 + 2x - 6)$

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

e) Subtract $8y^2$ from $2y^2$

$2y^2 - 8y^2 = -6y^2$

AIM: ADDING & SUBTRACTING POLYNOMIALS

For the expression, $3x^2$, identify the following

Numerical Coefficient 3

Base x

Exponent 2

Variable x

Monomial: one term involving #'s and/or variables

Ex: $7, 10x^2, 13rs$

Binomial: 2 terms joined by \oplus or \ominus and cannot combine

Ex: $x+9, 4x-12, 2x^2+7$

Trinomial: 3 terms joined by \oplus or \ominus and cannot combine

Ex: $x^2-7x+12$

Polynomial: an expression that has 1 or more monomials

Ex: $8y^3 - y^2 + 3y - 1$

*Look at the arrangement of the exponents

Standard Form: the terms are arranged so that the exponents decrease from left to right.

Degree of a polynomial: largest exponent. (3 is largest exponent in example)

Expression: contains no equal sign
Equation: contains an equal sign

Put the following polynomials in standard form and state its degree:

1) $-4x^2 + 5x + 3x^3 - 9$

2) $4x - 9x^2 + 3$

$3x^3 - 4x^2 + 5x - 9$

$-9x^2 + 4x + 3$

Degree: 3

Degree: 2

b/c its largest exponent.

ADDING POLYNOMIALS

RULE:

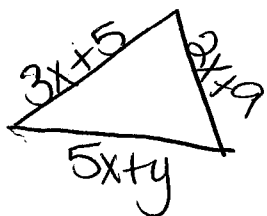
* combine like terms, leave exponents alone!

1) $(4x^2 - 3x + 2) + (5x - x^2 - 1)$

$-x^2 + 5x - 1$

$3x^2 + 2x + 1$

2) Find the measure of the perimeter of a triangle whose sides measure $3x + 5$, $2x + 9$, and $5x + y$.



$3x + 5$
 $2x + 9$
 $5x + y$
 $10x + 14 + y$

$10x + 14 + y$

* does order matter?

SUBTRACTING POLYNOMIALS

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

RULE: distribute the \ominus sign

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

$2x^2 - 3x - 1$

4) $x - (3x - 4)$

$x - 3x + 4$

$-2x + 4$

5) Subtract $2x^2 + 5x - 3$ from $x^2 - 7x + 3$

goes 1st!

$x^2 - 7x + 3$
 $- 2x^2 - 5x + 3$

$-x^2 - 12x + 6$