MATH 1010 ~ Intermediate Algebra

Chapter 5: POLYNOMIALS AND FACTORING

Section 5.2: Adding and Subtracting Polynomials

Objectives:

- Identify leading coefficients and degrees of polynomials.
- Add and subtract polynomials using vertical and horizontal format.
- Use polynomials to model and solve real life problems.

$5x^3-2x^2+3x+6$

Definition of a polynomial

$$a_n x^n + a_{n-1}x^{n-1} + a_{n-2}x^{n-2} + \ldots + a_2 x^2 + a_1 x + a_0$$

Vocabulary

Degree = n

Leading coefficient = a_n

Constant term = a_0

Binomial

Trinomial

Monomial

Standard form

State whether these are monomial, binomial or trinomial. State degree, leading coefficient and constant.

a) $3 - x^2$ b) $4x^3$ c) $x^3 + 5x - 2$

Are these polynomials? Why?

a) $x^{-2} + 7x - 2$ b) $\frac{1}{2x} - x + 1$ c) $\frac{2}{3}x^3 - 2x$

① EXAMPLE

Combine like terms and put in standard form.

a) $(2x^4 + 3x^2 - x^2 + 5x + 7) + (3x^2 - x + 1)$

b) $(6t - 4t^3 - t^2 + 3) - (3t^2 - 50)$

c) $(15 - 2y + y^2) + (3y^2 - 6y + 1) - (4y^2 - 8y + 16)$

d) $(x^{2m} - 6x^m + 4) - (2x^{2m} - 4x^m - 3)$

Application

Find an expression in terms of x for the perimeter and for the area of this figure. Evaluate each if x = 6ft.