Unit 5: Polynomials

4: Introduction to Polynomials

Poly – algebraic, (letters), expression with 1 term or the sum of two or more terms having <u>whole number</u> exponents <u>only</u>!

$$12x^3 - 3x^2 + 2x - 7$$

<u>Terms</u> – each "part" of a polynomial is a term.

$12x^3$ $-3x^2$ $2x$ -7

are terms!

<u>Coefficient</u> – number in front of variable.

12 -3 2

are coefficients

<u>Constant</u> – the term without any variable.

-7

Classes of Polynomials

monomial (1 term)

$7x^3$ $-3x$ $-6x^2y$ $7xyz$

binomial (2 terms)

$5x - 4$ $x + 7$ $2x^2 + 3x$ $5x^2y + 3xy$

trinomials (3 terms)

$2x^2 + 7x - 6$ $5x^2y - 2xy + 4$

polynomial (4 or more terms)

Degrees of Polynomials

- the largest sum of exponents of the variables in one term.

$12xy + 2x - 3$

x^1y^1 x^1

2 1

Degree = 2

Examples: Classify each polynomial by its degree and determin

a) $-3x^2 - 2xy + 4$

x^2 (2) x^1y^1 (2)

: trinomial degree = 2

b) $7x^2y$

x^2y^1

monomial degree = 3

c) $2x^2 - 3y^2$

binomial degree = 2

d) $7x^2 + 2xy - 3y^2 - 4$

polynomial degree = 2

e) $5x^2 - \frac{1}{x}$

not a polynomial. b/c $\frac{1}{x} = x^{-1}$ and you can't have negative exponents

Assignment. Read Pg. 175 - 178 (And look at the examples.)

Pg. 178 #5-10, [redacted] 19, 28, 30 (2014)