Chapter #5 Introduction to Polynomials

5.1 Language of Mathematics

Algebra   a branch of math that uses symbols to represent unknown numbers/quantities

Algebraic EQUATIONS

Algebraic EXPRESSIONS

- phrases with an equal sign

- phrases that do not have an equal sign
- can have different # of terms

terms - a number, variable (letter) or a product of numbers and variables
- are separated by addition or subtraction

EX #1 How many terms?

$$y + 7$$
2 terms

$$x^2 - 2x + 3$$
3 terms

$$-1$$
1 term

$$2t - 9 + t^3 - t^2$$
4 terms

$$2x^2y^5z^7$$
1 term

monomial   a 1 term expression
binomial   a 2 term expression
trinomial.   a 3 term expression
polynomial - an expression with 2 or more terms
"many"

- connected by addition or subtraction

EX#2 classify each expression

$x - 2y$
binomial
polynomial

$-17x^2y^2z^2$
monomial

$4x$
monomial

$2x^2 - 5 + 16xy$
trinomial
polynomial

$x + y - 2 + 5z$
polynomial

Degree of a Term   sum of the exponents

✳ the degree of a monomial is the sum of the exponents of its variables (letters)

EX #3

$2x^1$
degree 1

add'
$-3x^{②}y^{③}z^{①}$
degree 6

-7 no variables
∴ degree = 0

✳ the degree of a polynomial is the highest exponent of the variable in any 1 term

Ex.#4

$4x^2 - 3x^1 + 5$
   2   1
degree. 2

$3y^1 - 2y^3 + 2y^2$
  1   3   2
degree 3

add''
$4x^6 + 2x^{③}y^{④}$
   6   7
degree 7

$25x^{③}y^{①} + 36x^{②}y^{①}$
    4   3
degree: 4

degree 7   degree: 4

Algebra Tiles
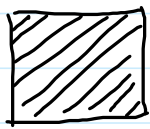
x^2 x 1 $-x^2$ $-x$ -1
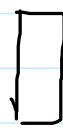
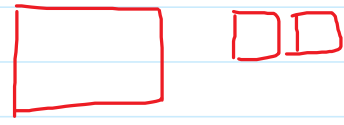Ex #5 Model each polynomial using algebra tiles

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

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