

Section 4.3: Fundamental Polynomial

Tuesday, March 19, 2019 12:19 PM

Operations

recall terminology:

monomial: one term $3x^2$, 5 , y , $5x^3y^2$

binomial: two terms $3x^2 + 5$, $y - z$

trinomial: three terms $x^2 + 5x + 4$

degree of a term: sum of all exponents of all variables in a term

example: $3x^2y^7$ has degree 9 (2+7)

examples: state the degree of each term

a)	$8x^4$	degree is	4
b)	$2xy^3$		4
c)	7		0

degree of a polynomial: highest degree of all terms

examples: state the degree of the following polynomials

a) $2x^3 + 3x^2 - 2x + 1$ degree 3

... .. 2

$$b) 6x^2 - 3xy + y^2$$

2

adding or subtracting polynomials:

example: add or subtract as appropriate

$$a) (3a^4 + 5a - 6) + (2a^4 + 2a - 3)$$

$$5a^4 + 7a - 9$$

remove brackets
and combine
like terms

$$b) (x^2y + xy^2) - 3(x^2y - y^2)$$

$$x^2y + xy^2 - 3x^2y + 3y^2$$

$$-2x^2y + xy^2 + 3y^2$$

evaluating a polynomial:

example: evaluate

$$a) P = 3x + 4 \quad \text{for } x = 6$$

so, substitute $x=6$ into the
expression for P

$$P = 3(6) + 4 \\ = 22$$

$$b) \quad P = 3x^2 - 4x + 1 \quad \text{for } x = -1$$

$$= 3(-1)^2 - 4(-1) + 1$$

$$= 3 + 4 + 1$$

$$= 8$$