

October 23, 2017

### Polynomials

- a term or more than one term connected by addition.

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

- term
- monomial
- Trinomial

### Degree

- the degree of a term
- \* Is the sum of exponents of the variables.

①  $5x^3y^2$   
Degree:  $3+2=5$

②  $-6x^1y^3$   
Degree:  $1+3=4$

Oct 23-9:02 AM

### Degree of a Polynomial

- Is the highest degree of all terms.

①  $2x^2 - 3x + 5$   
 $n: 2 \quad n: 1 \quad n: 0$   
 Degree of the Polynomial

②  $-6x^4 + 5y^5 + 2x^2 - 10$   
 $n: 5$   
 Degree: 5

③  $5x^2y^2 + 6xy^3 - 5t^5$   
 $n: 4 \quad n: 4 \quad n: 5$   
 Degree: 5

Oct 23-9:09 AM

### General Form of a Polynomial

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

$n=5$

$4x - 5x^3 + 2x^2 + 6x^4 - 10$

\*  $6x^4 - 5x^3 + 2x^2 + 4x - 10$   
 $n=4$  Descending order  
 Degree: 4

Oct 23-9:15 AM

$x^1$

$x^2$  (even) → parabola → curve

$x^3$  (odd) → curve

$x^4$  (even) → parabola → curve

$x^5$  (odd) → curve

Oct 23-9:21 AM

### Degree of a polynomial

also tells us the number of solutions

$3x^4 - 2x^2 + 5$   
 Degree: 4  
 4 solutions

Oct 23-9:29 AM

### Combining Like Terms

- what are like terms
- ① same variable
- ② same exponent

$5x^2 + 2x^2$   
 like terms

$5x^2 + 2x^2$   
 $x^2(5+2)$   
 $x^2(7)$   
 $7x^2$

$-x + 2x^2 + 5x + x^2$   
 $-x + 5x + 2x^2 + x^2$   
 $4x + 3x^2$   
 $3x^2 + 4x$   
 Degree: 2

Oct 23-9:33 AM

Do 5.2 1-60 mins

5.4 Addition of Polynomials

①  $\boxed{1}(\overbrace{x+3}) + \boxed{1}(\overbrace{2x-5})$

$$x + 3 + 2x - 5$$
$$x + 2x + 3 + (-5)$$
$$\boxed{3x - 2}$$

②  $\boxed{1}(\overbrace{x+3}) - \boxed{1}(\overbrace{2x-5})$

$$x + 3 - 2x + 5$$
$$\boxed{-x + 8}$$

Oct 23-9:39 AM