

Section 7.1 Polynomials
 many numbers?
 terms

term (power function $\Rightarrow ax^n$)
 $n = \text{whole \#}$

Polygon

sides	name
3	triangle
4	Quadrilateral
5	Pentagon
13	13-gon

Polynomial	
# terms	names
1	monomial
2	binomial
3	trinomial
4	4 term polynomial

How Complicated \Rightarrow Degrees

Degree of a term is the exponent

- $3x^2 \rightarrow$ 2nd Degree
- $\frac{1}{2}x^5 \rightarrow$ 5th Degree
- $7x \rightarrow$ 1st Degree
- $4x^0 \rightarrow$ 0 Degree

Degree of a Polynomial is the highest Degree term.

Degree	name
0	constant
1	linear
2	Quadratic
3	Cubic
4	Quartic

$$y = ax + b$$

$3x^2 + 7x + 1 \Rightarrow$ 2nd
 2nd 1st 0th degree
 trinomial

What is the

$$y = 3x + 10$$

X	y
0	10
1	13
2	16
3	19
4	22
5	25

Linear
degree 1

the Degree?

$$y = x^2$$

X	y
0	0
1	1
2	4
3	9
4	16
5	25

Quadratic
degree 2

Method of finite Differences
 $y = x^3$

X	y
0	0
1	1
2	8
3	27
4	64
5	125

Cubic
degree 3

Find the equation \rightarrow Find Degree
Regression on Cal

X	y
-3	-34
-2	-17
-1	-4
0	5
1	10
2	11
3	8
4	1

Difference = now - Previous

$$-17 - (-34) = 17$$

$$13 - 17 = -4$$

$$y = \underline{a}x^2 + \underline{b}x + \underline{c}$$

2nd Degree

Section 7.1 Polynomials

many terms

ax^n where n is whole #
 $3x^5$ (5th deg) $- 7x^4$ (4th deg) $+ 4x^2$ $- 3x^0$ (0 deg)

Degree^{term} = exponent
 Degree of Polynomial = Highest Degree
 Degree \Rightarrow how complicated

Polygon	
sides	names
3	triangle
4	quadrilateral
5	pentagon
15	15-gon

terms	name
1	monomial
2	binomial
3	trinomial
4	quaternary polynomial

Degree	name
0	constant
1	linear $y = ax + b$
2	Quadratic
3	Cubic
4	Quartic

How to find the Degree

$$y = 4x + 10$$

X	y
0	10
1	14
2	18
3	22
4	26
5	30

Linear
Degree 1

$$y = x^2$$

X	y
0	0
1	1
2	4
3	9
4	16
5	25

Quadratic
Degree 2

$$y = x^3$$

X	y
0	0
1	1
2	8
3	27
4	64
5	125

Cubic
3rd Degree

Method of Finite Differences

Find the equation of a Polynomial

- Find the Degree

- Regression on Calc.

2nd Degree \Rightarrow Quadratic

X	y	1	2
0	5	5	
1	10	1	-4
2	11	-3	-4
3	8	-7	-4
4	1	-11	-4
5	-10	-15	-4
6	-25		

$$y = -2x^2 + 7x + 5$$