Terminologies for Polynomials (in one variable)

Term	Definition	Examples/Sketches	How is this information useful?
polynomial	monomial or sum of monomials • Coefficient is real • Exponents are +	$3x^3 - 2x^2 + 7x - 10$ $4x + 2$ $-5x^2$	
terms	monomials that make up a polynomial • separated by + and -	$\underline{2x^2} - \underline{7x} + \underline{1}$ 3 terms	
monomial	#, variable, or product of # and variable(s)	$5x$ -2 $7x^2y^4$	
binomial	polynomial with 2 unlike terms	$4 + 5x$ $y - 1$	
trinomial	polynomial with 3 unlike terms	$-3x^2 + 9x - 2$	
coefficient	# in front of the variable in a term	$\underline{4}x$ $\underline{-3}y^2$	
leading coefficient	# in front of the term of highest degree	$\underline{7}x^5 - 2x^2 + 4$ L.C. = 7	Tells you how the graph will end +L.C. → pic ends ↑ ex −L.C. → pic ends ↓ ex
degree of polynomial	greatest exponent of the variable of the polynomial	$-3x^5 + 2x^4 - 3x + 9$ Degree is 5	Tells you the # of roots/solutions of the polynomial
descending order	arrangement of terms in a polynomial from high→low degree	$5x^4 - 3x^3 + 7x - 1$	Do this: then the L.C. and degree are in front!

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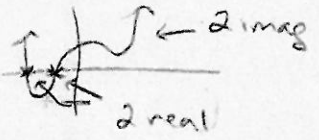
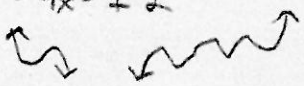
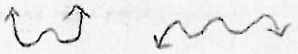
integer	# that is not a decimal or fraction	-12 29	
cubic	Special name for polynomial with degree of 3	$5x^3 - 3x + 2$	
roots/solutions	the value of x that makes y=0 in the polynomial		
odd degree function	function whose degree is either 1, 3, 5, 7...	$5x^7 - 6x^2 + 9$ $-4x^3 + 2$ 	Arrows on odd functions point in opposite directions
even degree function	function whose degree is divisible by 2	$-5x^6 + 2x - 1$ $4x^4 + 3x^3 + x^2 + x + 1$ 	Arrows on even functions point in same direction
conjugates	2 binomials that are the same with the exception of the sign between the terms	$a+bi$ & $a-bi$ $3+4i$ & $3-4i$ $2-\sqrt{3}i$ & $2+\sqrt{3}i$	Imaginary roots always come in pairs (conjugates)
end behaviors	description of the y values of a graph on the left and right sides	 As $x \to -\infty$ $y \to +\infty$  As $x \to -\infty$ $y \to +\infty$ As $x \to \infty$ $y \to +\infty$ As $x \to \infty$ $y \to -\infty$	If right side points ↑ ($+\infty$) it's a + function (L.C.+) If right side points ↓ ($-\infty$) it's a − function (L.C.−)