Terms: #'s and/or variables separated by + or − sign

Monomial	Binomial	Trinomial	Polynomial
1 term	2 terms	3 terms	4 or more terms

Degree: The highest exponent of the variable in the polynomial

Constant	Linear	Quadratic	Cubic	Quartic
degree is 0	degree is 1	degree is 2	degree is 3	degree is 4
* No variable *				

Examples

Polynomial	# of terms	Classification by term	Degree	Classification by Degree
$x^4 - 2x + 1$	3	trinomial	4	quartic
$7x^3 + 5x^2 - x - 2$	4	polynomial	3	cubic
8	1	monomial	0	constant

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Zeros: The number "k" is said to be a zero of a polynomial if $f(k)=0$. {roots, solutions, x-intercepts}

Multiplicity: tells us how often a zero occurs. You can determine multiplicity from a graph or factored form.

Multiplicity 1
- single root
- Crosses straight through

Multiplicity 2
- double root
- Kisses the axis

Multiplicity 3
- triple root
- cross through, but flattens

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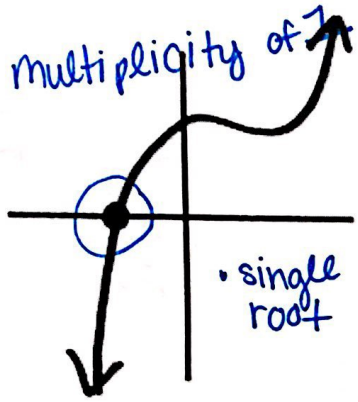
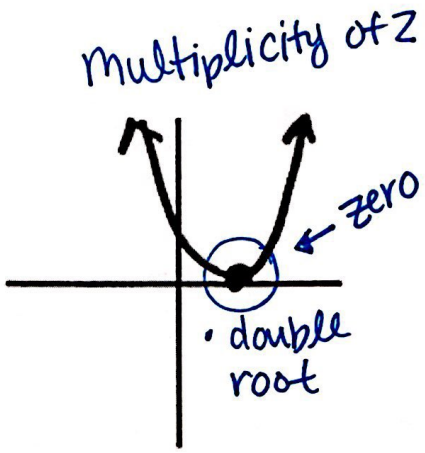
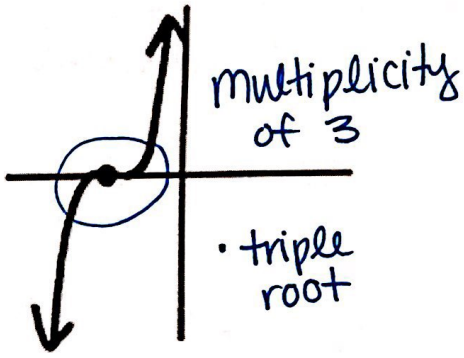
Zeroes and Multiplicity

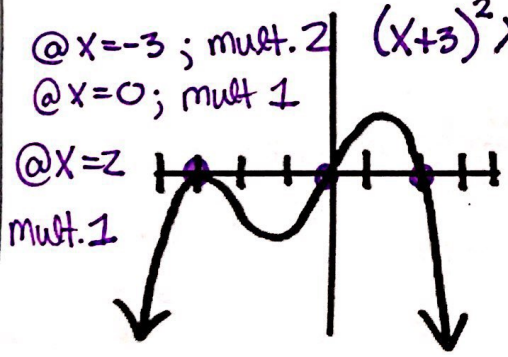






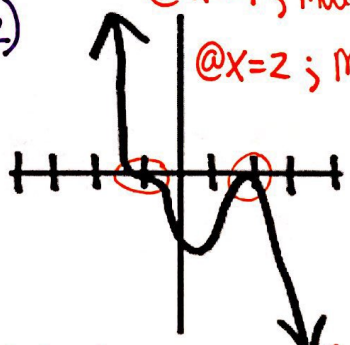
EX4 Factored Form $(x+3)^2 x(x-2)$

@ x=-3 ; mult. 2
@ x=0 ; mult 1
@ x=2 mult. 1



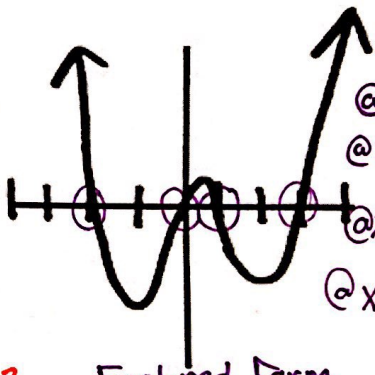
EX5

@ x=-1 ; mult. 3
@ x=2 ; mult. 2



Factored Form: $(x+1)^3(x-2)^2$

EX6



@x=-2 ; M.1
@x=0 ; M.1
@x=1 ; M.1
@x=3 ; M.1

Factored Form
$(x+2)x(x-1)(x-3)$

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