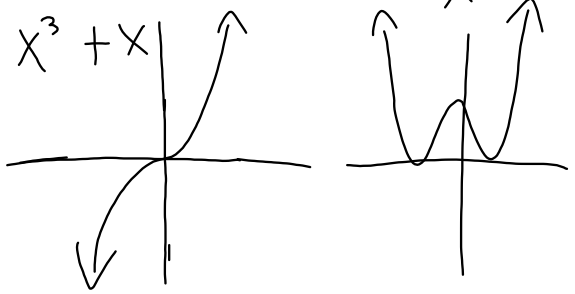
Graphing Higher Degree Functions



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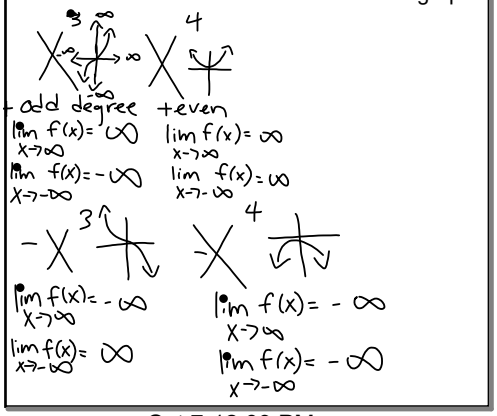
End Behavior:

The end behavior of a polynomial function is the behavior of the graph of f (x) as x approaches positive infinity or negative infinity. The degree and the leading coefficient of a polynomial function determine the end behavior of the graph.



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Finding Zeros With and Without Calculator

$f(x) = x^3 - x^2 - 6x$

$x(x^2 - x - 6)$

$a \cdot c$: -6; -3, 2; -1; b

$x = 0$ $x(x-3)(x+2)$

$x - 3 = 0 \quad +3 \quad x = 3$

$x + 2 = 0 \quad -2 \quad x = -2$

$\{0, 3, -2\}$

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Write a function using given zeros.

x=3,2,5

$(x-3)(x-2)(x-5)$

x=0,1,7

$x^2 - 2x - 3x + 6$

$(x^2 - 5x + 6)(x - 5)$

	x	-5
x^2	x^3	$-5x^2$
$-5x$	$-5x^2$	$25x$
6	$6x$	-30

$x^3 - 10x^2 + 31x - 30$

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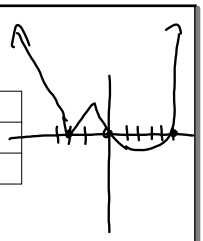
Multiplicities

$x^1(x-5)^3(x+2)^2$

0	1	C
5	3	C
-2	2	T
2	M	T/C
	6	



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Homework

pg. 209-211 Ex 25-28, 29-32, 33-38,39-42, 53, 54, 64

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