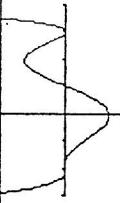


Polynomial Behavior

	Graph of $f(x)$	At Root: Crosses, Wiggles, Tangent/ Power of Corresponding Factor	End Behavior	Term of Highest Degree
		$x=-2$	$x=1$	$x=3$
$f(x) = (x+2)^3 (x-1)^1 (x-3)^2$		Wiggles / 3	Crosses / 1	Tangent / 2
$f(x) = 2(x+2)^1 (x-1)^2 (x-3)^1$				Up
$f(x) = (x+2)^5 (x-1)^1 (x-3)^1$				Up
$f(x) = 5(x+2)^1 (x-1)^4 (x-3)^2$				Up
$f(x) = (x+2)^3 (x-1)^2 (x-3)^2$				Up
$f(x) = -3(x+2)^1 (x-1)^1 (x-3)^2$				Up
$f(x) = -2(x+2)^3 (x-1)^1 (x-3)^1$				Up
$f(x) = -2(x+2)^2 (x-1)^1 (x-3)^2$				Up
$f(x) = -2(x-1)^3$				Up

PRACTICE: Polynomial Behavior

Name _____

Sketch each graph without the use of a calculator. Identify the highest-powered term and all zeros.

Function	Highest-powered term	Zeros	Graph
1) $2(x+1)^2(x-3)(x+5)$			
2) $(x-3)^4(x+5)^3(x-2)$			
3) $-2(x+2)^2(x-3)(x-5)^7$			
4) $-4x(x-2)^2(x+2)^2$			
5) $3(x-4)^3(x+3)(x-1)$			
6) $-2(x+1)(x+6)^2(x-5)^3$			
7) $-(x+4)^3(x+1)^2(x-2)^2$			
8) $5(x-2)^2(x+1)^2(x+3)^3$			
9) $(x-4)^3(x+4)^3$			
10) $-2(x+2)^2(x-3)^2$			