

Polynomial Behavior WS

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PAP Algebra 2

Sketch the graph on the chart. (Do not worry about scale.) Fill in the remaining columns of the chart based on your graph.

Function	Graph of f(x)	Roots, Multiplicity and Type of Behavior			Term of Highest Degree	End Behavior	
		x = -2	x = 1	x = 3		x → -∞	x → ∞
1. $f(x) = (x+2)^2(x-1)(x-3)^2$		x = -2 m = 3 Twist	x = 1 m = 1 Thru	x = 3 m = 2 Bounce	$1x^6$	UP	UP
2. $f(x) = (x+2)^2(x-1)(x-3)^2$		x = -2 m 2 bounce	x = 1 m 1 cross	x = 3 m 2 bounce	$1x^5$	DOWN UP	UP
3. $f(x) = (x+2)(x-1)^2(x-3)^2$		x = -2 m 1 cross	x = 1 m 3 twist	x = 3 m 2 bounce	$1x^6$	UP	UP
4. $f(x) = (x+2)(x-1)^4(x-3)^2$		x = -2 m 1 cross	x = 1 m 4 bounce	x = 3 m 2 bounce	$1x^7$	DOWN	UP
5. $f(x) = (x+2)^2(x-1)(x-3)$		x = -2 m 2 bounce	x = 1 m 1 cross	x = 3 m 1 cross	$1x^4$	UP	UP
6. $f(x) = -(x+2)^5(x-1)(x-3)$		x = -2 m 5 twist	x = 1 m 1 cross	x = 3 m 1 cross	$-1x^7$	UP	DOWN
7. $f(x) = 2(x+2)(x-1)^2(x-3)$		x = -2 m 1 cross	x = 1 m 2 bounce	x = 3 m 1 cross	$2x^4$	UP	UP
8. $f(x) = -2(x-1)^3$			x = 1 m 3 twist		$-2x^3$	UP	DOWN

