

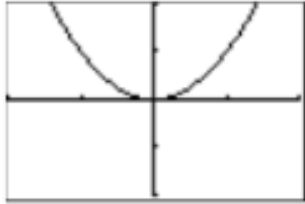
Name:

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Math Lab: Investigating Polynomial Behavior

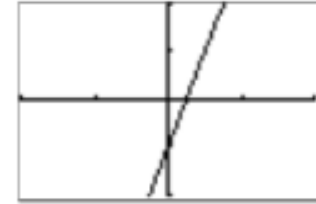
Bounce



Wiggle



Cross



Solve the equation to find the zeros by setting each factor equal to zero and solving for x. Then use a graphing calc to sketch the graph. Change the window settings to show -2.5 to 2.5 on each axis.		Each graph will have one or more of these zeros. If it has that zero, does it wiggle, bounce, or cross at that point? Give the exponent of the corresponding factor.			Describe the characteristics of the polynomial below. To find the degree, add the exponents listed under its zeros rather than trying to put it into standard form.			
Equation	Graph	$x = -1$	$x = 0$	$x = 1$	Left End Behavior	Right End Behavior	Sign of Leading Coefficient	Degree
1] $y = 2x^4(x - 1)$		bounce wiggle cross none	bounce wiggle cross none	bounce wiggle cross none				
		Exponent:	Exponent:	Exponent:				
2] $y = -6x(x + 1)^5$		bounce wiggle cross none	bounce wiggle cross none	bounce wiggle cross none				
		Exponent:	Exponent:	Exponent:				
3] $y = 3x(x - 1)^3(x + 1)^2$		bounce wiggle cross none	bounce wiggle cross none	bounce wiggle cross none				
		Exponent:	Exponent:	Exponent:				

Equation	Graph	$x = -1$	$x = 0$	$x = 1$	Left End Behavior	Right End Behavior	Sign of Leading Coefficient	Degree
4] $y = -5x(x - 1)^6(x + 1)^7$		bounce wiggle cross none	bounce wiggle cross none	bounce wiggle cross none				
		Exponent:	Exponent:	Exponent:				
5] $y = -5x^2(x + 1)^3(x - 1)^4$		bounce wiggle cross none	bounce wiggle cross none	bounce wiggle cross none				
		Exponent:	Exponent:	Exponent:				
6] $y = 4x^2(x - 1)^5(x + 1)$		bounce wiggle cross none	bounce wiggle cross none	bounce wiggle cross none				
		Exponent:	Exponent:	Exponent:				
7] $y = 200x^2(x - 1)^5(x + 1)^6$		bounce wiggle cross none	bounce wiggle cross none	bounce wiggle cross none				
		Exponent:	Exponent:	Exponent:				

8] What do you notice about the exponent on the factor in each equation when the graph “crosses” through a zero?	9] What do you notice about the exponent on the factor in each equation when the graph “bounces” off a zero?	10] What do you notice about the exponent on the factor in each equation when the graph “wiggles” through a zero?
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