Characteristics of Polynomials

Degree (highest exponent)	Name (# of terms)
Linear (x)	Monomial (1 term)
Quadratic (x^2)	Binomial (2 terms)
Cubic (x^3)	Trinomial (3 terms)
Quartic (x^4)	Polynomial (4+ terms)
Quintic (x^5)	

Domain is ALWAYS: (_____, _____)

Intercepts:

x-intercept(s):

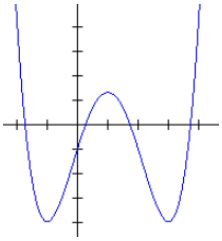
y-intercept:

Symmetry:

EVEN	ODD	NEITHER

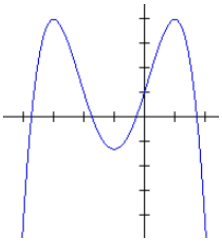
Range is:

Ends of the graph point up:



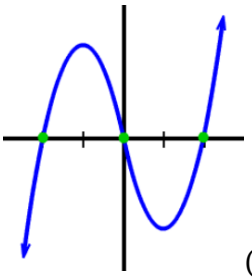
[____, _____)

Ends of the graph point down:



(____, ____]

Ends of the graph point opposite:



(_____, _____)

End behavior (based on what the graph/equation looks like):

	Even Degree	***Odd*** Degree
+ leading coefficient (LC)	LEFT End Behavior: ∞ RIGHT End Behavior: ∞	LEFT End Behavior: −∞ RIGHT End Behavior: ∞
− leading coefficient (LC)	LEFT End Behavior: −∞ RIGHT End Behavior: −∞	LEFT End Behavior: ∞ RIGHT End Behavior: −∞

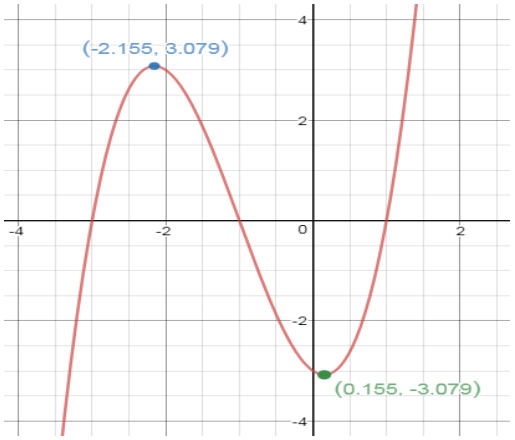
		Even Degree	Odd Degree
Absolute Maximum:			
Absolute Minimum:			
Relative Maximum:			
Relative Minimum:			
Interval of increase:			
Interval of decrease:			

Examples:

Identify the characteristics of the given graphs:

Degree & Name		Absolute Maximum	None
Domain	(____, ____)	Relative Maximum	(____, ____)
Range	(____, ____)	Absolute Minimum	None
y-intercept	(____, ____)	Relative Minimum	(____, ____)
x-intercept(s)	(____, ____), (____, ____) (____, ____)	Interval of Increase	(____, ____) & (____, ____)
Left end behavior	As x → -∞, y → ___	Interval of Decrease	(____, ____)
Right end behavior	As x → ∞, y → ___	Symmetry (even, odd, Neither)	

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



Degree & Name		Absolute Maximum	None
Domain	(____, ____)	Relative Maximum	(____, ____)
Range	(____, ____]	Absolute Minimum	(____, ____) & (____, ____)
y-intercept	(____, ____)	Relative Minimum	(____, ____) & (____, ____)
x-intercept(s)	(____, ____) (____, ____) (____, ____) (____, ____)	Interval of Increase	(____, ____) & (____, ____)
Left end behavior	As x → -∞, y → ____	Interval of Decrease	(____, ____) & (____, ____)
Right end behavior	As x → ∞, y →____	Symmetry (even, odd, Neither)	

$f(x) = x^4 + 2x^3 - x^2 - 2x$