

SECTION 4.1: GRAPHING POLYNOMIAL FUNCTIONS

Polynomial Function: a function that is a monomial or _____ of monomials

$$f(x) = a_n x^n + a_{n-1} x^{n-1} + a_{n-2} x^{n-2} \dots$$

Degree: the value of the largest _____

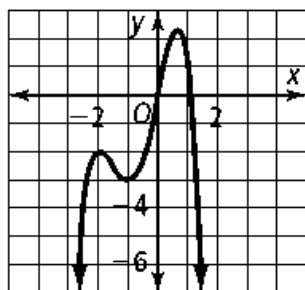
Degree	0	1	2	3	4
Name	Constant	Linear	Quadratic	Cubic	Quartic
Standard Form					
Graph					

End Behavior: explains a graphs behavior at the beginning and end

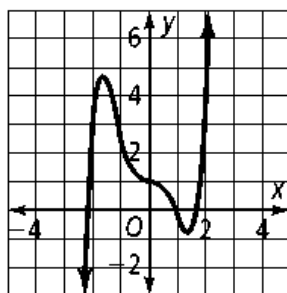
$$f(x) \rightarrow \text{_____ as } x \rightarrow +\infty$$

$$f(x) \rightarrow \text{_____ as } x \rightarrow -\infty$$

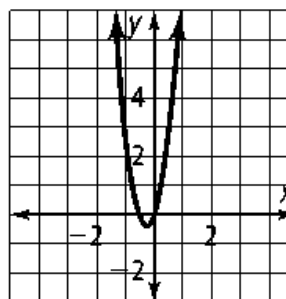
1.



2.



3.



Even Function (+)	Even Function (-)	Odd Function (+)	Odd Function (-)

Describe the end behavior of the graph. Graph the polynomial function.

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

5. $g(x) = -x^4 - x^3 + 2x^2 - x - 3$

Maximum and Minimum:

The maximum is the _____ turning point. The minimum is the _____ turning point. If there are multiple maximums and/or minimums, call them _____ max or _____ min

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

$$f(x) = x^4 - 8x^2 + 16$$

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