Name: Period: Date:

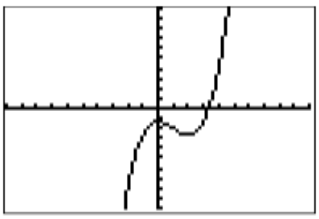
Practice Worksheet: End Behavior & Graphing Polynomials

WITHOUT graphing, identify the end behavior of the polynomial function.

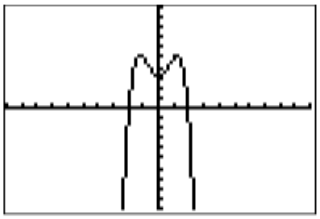
1] $y = 2x^5 + 7x^2 + 4x$ Degree:_____ Sign of LC:_____ as x → − ∞, y → _____ as x → ∞, y → _____	2] $y = -5x$ Degree:_____ Sign of LC:_____ as x → − ∞, y → _____ as x → ∞, y → _____	3] $y = 12x^4 - 2x + 5$ Degree:_____ Sign of LC:_____ as x → − ∞, y → _____ as x → ∞, y → _____
4] $y = 6 - 2x - 4x^2 + 5x^3$ Standard Form: Degree:_____ Sign of LC:_____ as x → − ∞, y → _____ as x → ∞, y → _____	5] $y = 1 + 2x^6 - 4x^2 - 2x^6$ Standard Form: Degree:_____ Sign of LC:_____ as x → − ∞, y → _____ as x → ∞, y → _____	6] $y = 4x + 2 - 5x^6$ Standard Form: Degree:_____ Sign of LC:_____ as x → − ∞, y → _____ as x → ∞, y → _____

Match the polynomial function with its graph WITHOUT using a graphing calculator. Think about how the degree of the polynomial affects the shape of the graph.

A.



B.



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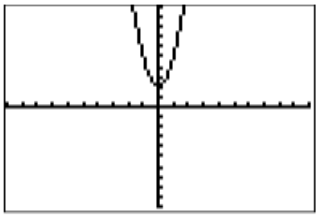

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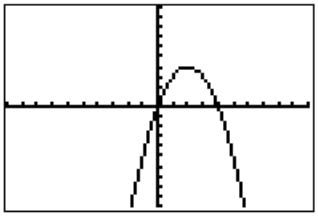

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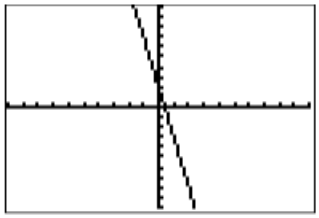

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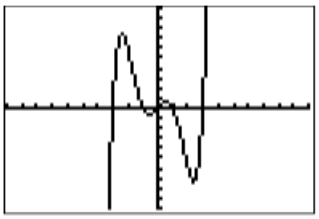
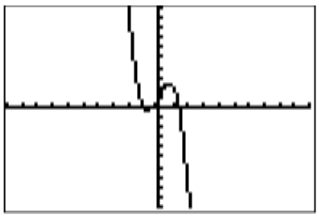
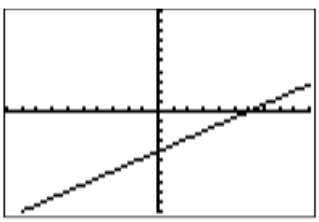


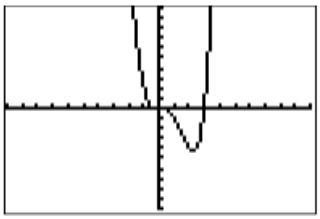
G.



H.



I.



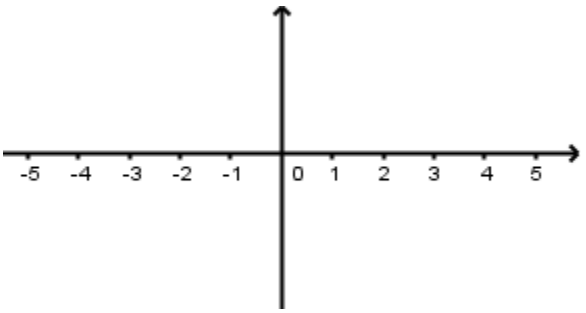
____ 7] $y = -x^2 + 4x$ ____ 8] $y = -2x^3 + 3x + 1$ ____ 9] $y = \frac{1}{3}x^3 - x^2 - \frac{4}{3}$

____ 10] $y = -x^4 + 3x^2 + 3$ ____ 11] $y = 3x^2 + 2$ ____ 12] $y = \frac{2}{3}x - 4$

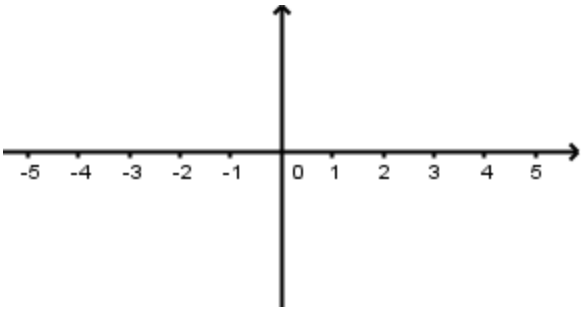
____ 13] $y = \frac{1}{2}x^4 - \frac{3}{2}x^3$ ____ 14] $y = \frac{1}{5}x^5 - 2x^3 + \frac{9}{5}x$ ____ 15] $y = -5x + 2$

Solve and graph each of the following polynomial equations. Show all work. Circle each solution.

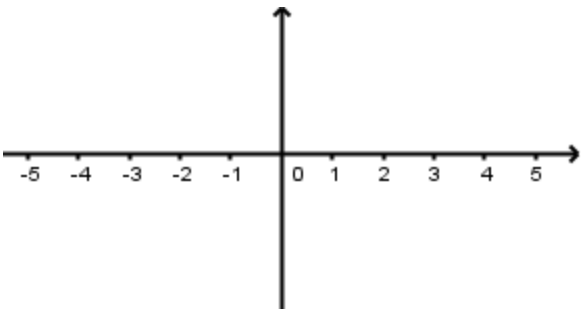
16] $f(x) = 6x^3 + 7x^2 - 63x + 20$



17] $f(x) = -9x^4 + 39x^3 - 25x^2 - 43x + 30$



18] $f(x) = -15x^3 + 27x^2 + 54x$



19] $f(x) = 16x^4 - 73x^2 + 36$