Algebra II Name _____

Polynomials #1

Decide whether the following functions are polynomial functions. If so, write it in standard form and state its degree, type and leading coefficient.

1. $f(x) = -3x + 5x^3 - 6x^3 + 2$

2. $p(x)=\frac{1}{2}x^2+3x-4x^3+6x^4-1$

3. $f(x) = 9x^4 + 8x^3 - 6x^{-2} + 2x$

4. $g(x)=\frac{5}{3}x^2-\sqrt{7}x^4+8x^3-\frac{1}{2}+x$

5. Describe and correct the error in analyzing the function.

$$f(x)=2x^4+4x-9\sqrt{x}+3x^2-7$$

f is a polynomial function.
The degree is 4 and f is a quartic function.
The leading coefficient is 2.

Evaluate the following functions.

6. $h(x) = -3x^4 + 2x^3 - 12x - 6$, find f(-2)

7. $g(x) = -x^3 + 3x^2 + 5x + 1$, find g(-5)

Describe the end behavior of the graph of the function.

8. $h(x) = -5x^4 + 7x^3 - 6x^2 + 9x + 2$

9. $f(x) = 11 - 18x^2 + 5x^5 - 12x^4 - 2x$

Graph the polynomial function.

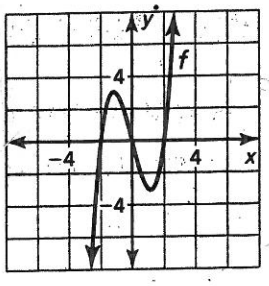
10. $q(x) = x^4 - 2$

11. $h(x) = x^3 - 2x + 3$

12. $f(x) = x^5 - 2x^3 + 1$

Use the graphs to describe the x-values for which f is increasing, decreasing, positive and negative.

13.



14.