Name _____ **Date** _____

Polynomial Function:

Is it a polynomial?

a) $f(x) = x^3 + 3x$

b) $f(x) = x^4 + 3x - 2x^2 - 5^x$

c) $f(x) = 6x^4 - 2x^{-1} + x$

d) $f(x) = -0.5x + \pi x^2 - \sqrt{2}$

A polynomial is in **STANDARD FORM** when:

- They are ordered from left to right in _____ order; which means from the _____ exponent to the _____.

The **DEGREE** is:

- The _____exponent in polynomial. It determines the _____.

Ex: **$-7x + 9 - 4x^2$** The degree is ____.

Classifying:

The **LEADING COEFFICIENT** is:

- The _____ once in _____.

A **CONSTANT** is:

- The term _____ a variable.

a) $g(x) = 2x^2 - 4 - 3x^4 + 12x^3$

standard form:

degree:

leading coefficient:

constant:

b) $h(x) = 3 - x$

standard form:

degree:

leading coefficient:

constant:

You can classify polynomials by _____ and _____.

Polynomial	# of Terms	Name by # of Terms	DEGREE	Name by Degree
$f(x)=12$				
$k(x)=8x$				
$j(x)=4x^2+3$				
$g(x)=5x^3+x^2$				
$h(x)=3x^2-4x+6$				
$s(t)=7t^4-7t+3$				

Adding and Subtracting Polynomials:

Adding:

- _____

Subtracting:

- _____
- _____

1. $(4y^3-5y^2)+(12y^5-2y^3+14y^2)$

2. $(3y^5+8y^3-10y^2)-(-12y^5+4y^3+14y^2)$

Multiplying Polynomials:

1. $(3m-1)(8m+7)$

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

3. $(x-1)(x+4)(x+3)$