INTERMEDIATE ALGEBRA

GPS # 17 **5.1 POLYNOMIAL FUNCTIONS** **NAME:** Parul Patel

Good Job!

Useful Guidelines:

* A monomial is a term in which the variables have only nonnegative integer exponents. Example: $3x^2$, $5x^3y$, $-2x$, -7, and $3z^4y^5$.
* A polynomial is a term or a finite sum of terms in which all variables have whole number exponents and no variables appear in denominators. Example: $3x^2 - 4xy^2 + 1$.
* Adding polynomials is simply combining like terms together.
* Subtracting polynomials is simply adding the first polynomial and the negative of the second polynomial.

1. For each polynomial function, find $f(2)$ and $f(-3)$.

a) $f(x) = -4x + 3$

$f(2) = -4(2) + 3$
$= -8 + 3$
$= -5$

$f(-3) = -4(-3) + 3$
$= 12 + 3$
$= 15$

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

$= (2)^2 - 2(2) + 5$
$= 4 - 4 + 5$
$= 5$

$= (-3)^2 - 2(-3) + 5$
$= 9 + 6 + 5$
$= 20$

Evaluate the following: Polynomial

2. a) $(3x^2 + 7x - 5) + (5x^2 - 2x + 3) = 8x^2 + 5x - 2$

b) $(y^3 - 2y + 1) + (y^3 - 8y - 13) = 2y^3 - 10y - 12$

c) $(-z^4 + 7z^2 - 2z) + (2z^3 - 2z^2 + 3z) = -z^4 + 2z^3 + 5z^2 + z$

d) $(5m^3 - 2m + 1) + (-m^3 + 8m^2 - 15) = 4m^3 + 8m^2 - 2m - 14$

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

b) $(t^3 + 3t - 2) - (t^3 - 8t - 3) = t^3 + 3t - 2 - t^3 + 8t + 3$
$= 11t + 1$

c) $(-z^4 - 4z^2 + 8z) - (3z^3 + 9z^2 - z) = -z^4 - 4z^2 + 8z - 3z^3 - 9z^2 + z$
$= -z^4 - 3z^3 - 13z^2 + 9z$

d) $(9m^3 - m - 10) - (-2m^3 + 3m^2 - 5) = 9m^3 - m - 10 + 2m^3 - 3m^2 + 5$
$= 11m^3 - 3m^2 - m - 5$

e) $(10n^4 - n^2 + 2p) - (-2n^4 + n^2 - 3p) - (n^4 - 2n^2 + p) = 10n^4 - n^2 + 2p + 2n^4 - n^2 + 3p - n^4 + 2n^2 -$
$= 11n^4 + 4p - 5p$