5.3 Intro to Polynomials: Adding & Subtracting Polynomials

Warm Up:

"**Add Polynomials**" = *combine like terms* of the polynomials which need to be added

1. Add the polynomials by collecting like terms. Then, simplify.

a) $(3x^2 - 2x) + (x^2 + x)$ b) $(4n^2 - 2n - 4) + (-n^2 + 5n)$ c) $(7r - 8) + (3r^2 - 11)$

d) $(2b^2 - 8b) + (-2b^2 + 11b)$ e) $(7t^2 - 6t + 9) + (-2t^2 + 6t - 5)$ f) $(-14k - 10) + (8k - 23)$

"**Subtract Polynomials**" = *add the opposite expression* of the polynomial that needs to be subtracted. The opposite of a polynomial is found by taking the opposite of each its terms.

Ex: The opposite of $2x^2 - 3x + 7$ ***is*** $-2x^2 + 3x - 7$

2. **Determine the opposite of each expression.**

a) $6a$ _____ b) $-3c^2 - 9$ _____

c) $d^2 - 8d + 2$ _____ d) $6w^2 + 4w - 0.8$ _____

3. **Subtract the polynomials by adding the opposite terms, collecting like terms, and then simplifying.**

a) $(5a - 4) - (3a - 2)$ b) $(7 - 6r) - (3 + r)$

c) $(6y^2 - 2y) - (-y^2 - 3y)$ d) $(8 - 5t) - (-9 - 4t)$

e) $(h - 1) - (3h^2 + 7)$ f) $(4k^2 - 6k + 1) - (-2k^2 + 5)$

4. Simplify and state the degree of your answer

a) $\left(3x^2y - 2xy^2\right) + \left(3yx^2 - 2y^2x\right)$ b) $-\left(3x^2 - 2x\right) - \left(-2x + 3x^2\right) + \left(6x^2 - 4x\right)$

c) $\left(g^2h - g^2 + h\right) - \left(4hg^2 + 3g^2 - h\right)$ d) $\left(7mn - 2n + 3\right) - \left(3nm + 4\right) + (3m - mn)$