MPM 1DI
Unit 2 Polynomials

Day 6 - Simplifying Polynomials Part II
(Adding and Subtracting Polynomials)

Adding and Subtracting Polynomials

Part 1 - Adding Polynomials

When adding polynomials, remove the brackets, collect like terms, then simplify.

Example #1: Simplify

1. $(3x+2)+(5x+3)$

$=3x+2+5x+3$

$=3x+5x+2+3$

$=8x+5$

2. $(-3n+5)+(n-4)$

$=-3n+5+n-4$

$=-3n+n+5-4$

$=-2n+1$

3. $(6r+5)+(4r-1)+(3r-2)$

$=6r+5+4r-1+3r-2$

$=6r+4r+3r+5-1-2$

$=13r+2$

Part 2 - Subtracting Polynomials

When subtracting polynomials, we add the opposite.

Opposites add to give 0.

So the opposite of 5 is -5.
The opposite of -4x is 4x.

Example #2: State the opposite of each of the following polynomials.

1. $3x^2 + 2x - 1$ → $-3x^2 - 2x + 1$

2. $-4x^3 + 2x^2 - 1$ → $4x^3 - 2x^2 + 1$

3. $(-3r^2 + 4r + 6)$ → $(+3r^2 - 4r - 6)$

Example #3: Simplify

1. $(6r + 5) - (4r + 1)$

$= (6r + 5) + (-4r - 1)$

$= 6r + 5 - 4r - 1$

$= 6r - 4r + 5 - 1$

$= 2r + 4$

2. $(4d - 1) - (-3d - 1)$

$= (4d - 1) + (3d + 1)$

$= 4d - 1 + 3d + 1$

$= 4d + 3d - 1 + 1$

$= 7d$

3. $(6m^2 - 5mn - 5n^2) - (-6m^2 + 4mn + 7n^2)$

$= (6m^2 - 5mn - 5n^2) + (6m^2 - 4mn - 7n^2)$

$= 6m^2 - 5mn - 5n^2 + 6m^2 - 4mn - 7n^2$

$= 6m^2 + 6m^2 - 5mn - 4mn - 5n^2 - 7n^2$

$= 12m^2 - 9mn - 12n^2$