Name: _____   Date: _____

UNIT 1   LESSON 6

AIM: HOW DO WE FACTOR BY GROUPING?

Do Now: Factor each of the following ***completely.***

a) $2x^2 - 18$ b) $2x^2 - 8x + 6$

FACTORING BY GROUPING

When do we use it?	
STEPS	**EXAMPLE**
1. Split the polynomial in half, ensuring there is a GCF on each side. 2. Find the GCF of each half 3. Combine like binomials 4. Write the remaining parts in a separate parenthesis	$ax + ay + bx + by$

1) $x^3 - m + x^2m - x$ 2) $x^2 + 2x - mx - 2m$
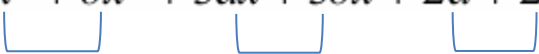
6 TERM EXAMPLES: **Make sure that you factor *completely***

Factor: $ax^2 + 3ax + 2a + bx^2 + 3bx + 2b$

An alternate approach. If we rearrange the terms in 3 groups of two as follows:

Factor: $ax^2 + bx^2 + 3ax + 3bx + 2a + 2b$

PRACTICE:

4) $m^2 + abm - mx - abx$

5) $x^3 + 3x^2 - 4x + 4x^2y + 12xy - 16y$

6) $3c^3 - 2c^2 - 12c + 8$

7) $k^4 - 4k^2 + 8k^3 - 32k + 12k^2 - 48$

*8) $x^2z^3 + xz^2 + x^3z^2 - 2x^2z^2 - 2xz^3 + z^3$