

FACTORING BY GROUPING

Example 1:

Factor by Grouping: $x^3 + 4x^2 + 6x + 24$

- Given a polynomial with four terms, group the terms into two groups of two.

- Factor out the GCF from both groups.

- Now factor out the common factor (in this case, $x + 4$).

- So, $x^3 + 4x^2 + 6x + 24 = (x + 4)(x^2 + 6)$

*****You know you did it correctly if you have two identical binomials**

Factor by grouping.

Example 2: $x^3 + 2x^2 + 3x + 6$

Example 3: $x^3 + 9x^2 - 2x - 18$

Example 4: $5x^3 + 25x^2 + x + 5$

Example 5: $x^3 + 9x^2 + 4xy + 36y$

Example 6: $3x^3 + x^2 + 15x + 5$

Example 7: $x^5 + 2x^3 + x^2 + 2$

Example 8: $4x^3 + 4x^2 + 6x + 6$

Example 9: $x^4 + 3x^3 + x^2 + 3x$