

Factoring Strategies

****Always pull out _____ if possible!!!**

Count the number of terms...this will help determine which factoring strategy to use.

Two terms: Look for special cases!

Difference of Squares $a^2 - b^2$ $= (a - b)(a + b)$	$16x^2 - 25$	$x^4 - 49$
Difference of Cubes $a^3 - b^3$ $= (a - b)(a^2 + ab + b^2)$	$27x^3 - 64$	$x^6 - 64$
Sum of Cubes $a^3 + b^3$ $= (a + b)(a^2 - ab + b^2)$	$8x^3 + 125$	$x^3 + 27$

Three terms: Quadratics in standard form or higher order trinomials that can be rewritten in quadratic form.

Leading coefficient = 1 $x^2 + bx + c$ factors of c that sum to b (may use diamond problem)	$x^2 + 10x + 21$	$x^4 + 4x^2 - 32$
Leading coefficient $\neq 1$ $ax^2 + bx + c$ (may use area model with a diamond problem)	$6x^2 - 11x - 10$	$10x^3 - 68x^2 - 14x$

Four terms: Factor by Grouping pairs of terms together

$ax^3 + bx^2 + cx + d$	$4x^3 + 20x^2 - 3x - 15$	$3x^4 - 6x^3 + 15x^2 - 30x$
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