Pre-Calculus   Name: _____

Notes: Factoring Polynomial Functions

	Example #1	Example #2	Example #3	Example #4
	$x^6 - 16x^2$	$-7y^4 - 56y$	$8x^2y - 20xy - 12y$	$3x^3 + 15x^2 - 12x - 60$

Factor out the GCF (if there is one) ⟹

_____   _____   _____   _____

___ terms   ___ terms   ___ terms   ___ terms

Identify the method of factoring by the number of terms. ⟹ **Binomial** (2 terms) means either or   **Trinomial** (3 terms) means either or   **Polynomial** (4+ terms)

The difference of squares $(a^2 - b^2) = (a + b)(a - b)$	The sum or difference of cubes $(a^3 \pm b^3) = (a \pm b)(a^2 \mp ab + a^2)$	Guess & Check	Split the Middle Term	Grouping

Always check to see if there is more factoring to do… ☺ ⟹

NOW YOU TRY ☺
1) $-2x^3 + 2x$ 2) $54x^3 - 128$ 3) $-36x^3y + 15x^2y + 6xy$ 4) $60x^3 + 40x^2 - 135x - 90$ 5) $x^4 - 29x^2 + 100$