FACTORING REVIEW!!

Remember, when factoring there are a couple of different types. Always first find the GCF and then ask yourself what type of polynomial you are dealing with!

Step 1: Take out the Greatest Common Factor if it isn't 1!!

Step 2: Find the type and then take the appropriate actions ☺

Polynomial that only has a GCF:

You are done!! ☺

Four Term Polynomial:

Split the terms up into two groups and then factor each group!!

Example –

$6x^3 - 3x^2 - 8x + 4$

$\mathbf{6x^3 - 3x^2} - \mathbf{8x + 4}$

$\mathbf{3x^2(2x - 1) - 4(2x - 1)}$

$(3x^2 - 4)(2x - 1)$

Difference of Squares:

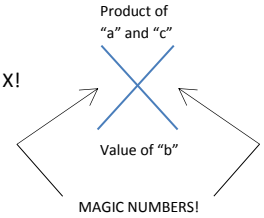
$\underline{a^2 - b^2 = (a + b)(a - b)}$

**This can only be used when it is a binomial that has a subtraction sign between the two terms, AND all parts of the terms are perfect squares!!

Trinomial:

Use the standard form $ax^2 + bx + c$ to find your "a", "b", and "c" values.

BIG X!



Once you complete the BIG X, then Bust up the b!! Now you have 4 terms and you can group!! ☺

Examples with factored forms:

Polynomial in Standard Form	Factored Form
1. $x^2 + 7x + 6$	$(x + 6)(x + 1)$
2. $x^2 - 49$	$(x - 7)(x + 7)$
3. $25x^2 - 81$	$(5x - 9)(5x + 9)$
4. $15x^2 - 21x + 6$	$3(5x - 2)(x - 1)$
5. $2x^2 + 6x + x + 3$	$(2x + 1)(x + 3)$
6. $72a^4b^3 - 36a^2b^5 + 12a^2b^2$	$12a^2b^2(6a^2b - 3b^3 + 1)$
7. $64y^2 - 121$	$(8y - 11)(8y + 11)$
8. $32m^2 - 98$	$2(4m - 7)(4m + 7)$
9. $x^2 + 16$	$prime$
10. $27xy^2 - 9xy^3 + 36x$	$9x(3y^2 - y^3 + 4)$
11. $x^3 - 5x^2 - 4x + 20$	$(x - 2)(x + 2)(x - 5)$
12. $a^2 - 6a + 9$	$(a - 3)(a - 3)$ or $(a - 3)^2$
13. $10x^2 + 5x - 15$	$5(x - 1)(2x + 3)$
14. $14m^2n^2 - 21mn^3 + 28mn^2$	$7mn^2(2m - 3n + 4)$
15. $3y^2 - 2y + 4$	$prime$