

# Mr. B's Algebra Connections



# Strategic Factorer Polynomials

1. If present, **factor out greatest common factor (GCF)**. DON'T FORGET THIS FACTOR IN YOUR FINAL ANSWER!
2. Determine if there are 2 terms, 3 terms, or more terms in polynomial
  - a. Two terms: **Difference of squares.**  $a^2 - b^2 = (a - b)(a + b)$
  - b. Three terms:
    - i. **Perfect square trinomial.**  $a^2 + 2ab + b^2 = (a + b)^2$  or  $a^2 - 2ab + b^2 = (a - b)^2$
    - ii.  $x^2 + bx + c = (x + ?_1)(x + ?_2)$  where  $(?_1 + ?_2) = b$ ;  $(?_1 * ?_2) = c$
    - iii.  $ax^2 + bx + c$ , try various combinations of factors of  $ax^2$  ( $?_1x$  &  $?_2x$ ) and  $c$  ( $?_3$  &  $?_4$ ) until a middle term of  $bx$  is obtained when checking  $(?_1x * ?_4) + (?_2x * ?_3) = bx$
    - iv. **Try factoring by grouping.** Find 2 numbers whose produce is  $a * c$  that sum to  $b$ . Rewrite  $bx$ , using these terms. Factor the resulting 4-term polynomial.
  - c. Four terms: Group the 1<sup>st</sup> two terms and the last two terms. Factor out the greatest common factor (GCF) from each grouping. Then factor out the common binomial term.

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