

9.5: Factoring and Solving when  $a > 1$

“I WILL ...

Factor and Solve Quadratic Functions when  $a > 1$ .”

I. Steps in Factoring and Solving Polynomials, Standard Form:  $Ax^2 + Bx + C = f(x)$

- A. Make sure the equation equals to ZERO.
- B. Determine if there is a GCF. If there is, take it out.
- C. Determine the Target Product and Target Sum of the equation
  1. Multiply the First and Last Term
  2. Ensure the terms adds to the middle and multiplies the end
  3. Rewrite the problem with the new middle terms
  4. Make sure that one of the binomials is the same on both sides
- D. Factor by Grouping by Splitting the Terms
- E. Take out the GCF and Factor by Grouping
- F. Combine like terms and multiply

II. Model Problems

Ex 1: Factor $2x^2 + 5x + 2$		Ex 1: Factor $2x^2 + 5x + 2$ through tiles
Ex 2: Factor $f(x) = 2x^2 - 7x + 3$	Ex 3: Factor $3x^2 + 20x - 7$	Your Turn: Factor $3x^2 + 14x - 5$
Ex 4: Factor $2x^2 - 9 - 3x$	Ex 5: Factor $4x^2 - 3 + 4x$	Ex 6: Factor $6x^2 + 5x - 6$

Your Turn: Factor $6x^2 + 37x + 6$	Ex 7: Solve through factoring, $(3x - 4)(2x + 5) = 0$	Your Turn: Solve through factoring, $2x(3x + 7) = 0$
Ex 8: Solve through factoring, $2x^2 + 5x + 2 = 0$	Ex 9: Solve through factoring, $2x^2 - 35 = 3x$	Your Turn: Solve through factoring, $6x^2 - 15x = 99$
Ex 10: Factor and Solve $16x^2 - 1 = 0$	Ex 11: Factor and Solve $9x^2 - 64 = 0$	Your Turn: Solve through factoring, $25x^2 - 9 = 0$
Ex 12: Solve through factoring, $51x^2 = 17x$	Ex 13: Solve through factoring, $14x^2 + 12x = 2$	Your Turn: Solve through factoring, $-4x^2 - 31x = -8$

Assignment: WKST