# DO NOT TURN THIS IN!

Quadratic Equations: Factoring

Name: _____     Date: _____     Period: _____

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## Solving Quadratic Equation by Factoring
### $f(x) = ax^2 + bx + c$

When solving quadratic equations by factoring, we are finding the factors that will give us the root(s)/zero(s) for the quadratic equation. There are several approaches to factoring quadratic equations.

| Examples | Steps | Practice Problems |
|---|---|---|
| 1. $f(x) = x^2 - 12x + 35$ | **Solving Quadratic Equations**<br>1. Set the equation in standard form equal to 0.<br>$\quad ax^2 + bx + c = 0$<br>2. Draw the X.<br>3. Identify the value of a, b and c and place them in appropriate location of the X. | 1. $g(x) = x^2 - 9x + 18$ |
| 2. $x^2 + 15x + 44 = 0$ | 4. Find the factors<br>5. Rewrite your equation in term of their factors.<br>6. Set each factor equal to zero and solve for x.<br>7. Check your answer. | 2. $f(x) = x^2 + 4x - 45$ |
| 3. $3x^2 + 8x = 16$ |  | 3. $8x^2 = 10x - 3$ |
| 4. $h(x) = 12x^2 - 6x$ | **Note:** If there is no constant in the equation.<br>1. Set the equation equal 0.<br>2. Find the GCF (great common factor)<br>3. Set the factors equal 0 and solve for the variable. | 4. $f(x) = 7x^2 - 14x$ |
| 5. $4x^2 - 12x = 0$ |  | 5. $2x^2 - 5x = 0$ |