Name: _____ Date: _____

Solving Quadratics by Graphing and Factoring

Solve a Quadratic Algebraically by Factoring

1. Get the equation into _____ and _____.
2. _____ the quadratic to create two binomials with the variable as the first term and set it equal to zero. EXAMPLE:
3. Set each binomial equal to zero and _____.

Example 1: Factoring when (a = 1)

$x^2 - 12x = -20$

Example 2: Factoring (GCF)

$3x^2 + 9x - 54 = 0$

Example 3: Factoring (DOTS)

$9x^2 - 64 = 0$

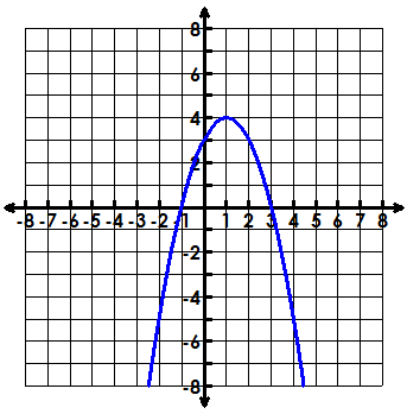
Example 4: Factoring (a >1)

$6x^2 + 11x + 4 = 0$

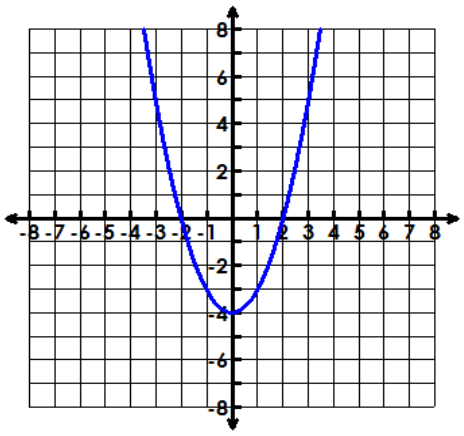
Solve a Quadratic by Graphing

To solve a quadratic by graphing is to find where the parabola crosses the x-axis.
We call these the _____, _____, _____, ***or*** _____.

Example 1: Find the roots.



Example 2: Find the zeros.



Try It: Find the zeros of the function by factoring.

1. $h(x) = x^2 + 6x + 9$

2. $g(x) = 2x^2 + 9x + 4$

Try It: Find the roots of each equation by factoring.

3. $12x = 9x^2 + 4$

4. $16x^2 = 9$