Quadratic Formula

This is another method to solve quadratic equations. If the quadratic cannot be factored we have to have something else that will allow us to solve the equation. There are 2 such methods—completing the square and the quadratic formula. The quadratic formula is derived from completing the square on the general equation:
$ax^2 + bx + c = 0$

You MUST memorize the formula: $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Process:
1. Write the equation in standard form: $ax^2 + bx + c = 0$
2. Identify $a, b,$ and c.
3. Substitute numbers into formula.
4. Carefully do the arithmetic under the square root sign.
5. If possible, simplify the radical.
6. If possible, reduce the fraction.

1. $x^2 - 4x - 1 = 0$

2. $9x^2 - 18x + 7 = 0$

3. $x^2 + 9x + 11 = 3x - 2$

4. $x(x+2) = 6x - 11$

5. $(3x - 2)(x + 4) = -7$