**Quadratic Equations**

A quadratic equation is an equation that can be written in the form .

**The Square Root Property**

If , then . This allows us to solve quadratic equations with no term.

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| --- | --- |
| **Example:** Solve .  **Solution:** .  Therefore .  Using the square root property, | A graph in the x y plane. The graph is a parabola opening up from a minimum point, located on the y axis at y = -75. The parabola passes through the x axis at x = -5 and x = 5..The solutions are the -intercepts in a graph. |

**The Zero Product Property**

If , then either or . This allows us to solve by factoring:

1. Write the equation with on one side.
2. Factor the other side—the side with the variable—as much as possible.
3. Set each factor equal to zero, then solve each resulting equation.

**Example:** Solve .

**Solution:**

* If , then , so .
* If , then .

**The Quadratic Formula**

In general, the equation has solutions .

**Example:** Solve .

**Solution:** , , .