How to solve incomplete quadratic equations:

There are two kinds of incomplete quadratic equations:

1st) c=0 → The 2nd degree equation is **ax²+bx=0**

To solve this kind of equations you should follow the following steps:

- Move all terms to the same side, so the equation is set equal to 0.
- Factor the algebraic expression.
- Set each factor equal to 0. (If the product of two factors equals 0, then either one or both of the factors must be 0).
- Solve each resulting equation.

Example:

$$x^2 - 2x = 0 \Rightarrow x(x-2) = 0 \Rightarrow x_1 = 0 \quad x_2 = 2$$

$$7x^2 + 12x = 0 \Rightarrow x(7x+12) = 0 \Rightarrow x_1 = 0 \quad x_2 = -\frac{12}{7}$$

Example:

$$2x^2 - 6x = 0 \qquad 2x(x-3) = 0$$

$$2x = 0 \qquad x = 0$$

$$x - 3 = 0 \qquad x = 3$$

2nd) b=0 → The 2nd degree equation is **ax²+c=0**

This type of equations can be solved by solving for x.

$$ax^2 + c = 0 \Rightarrow ax^2 = -c \Rightarrow x^2 = \frac{-c}{a} \Rightarrow x = \pm \sqrt{\frac{-c}{a}}$$

Example: $x^2 - 225 = 0$

$$x^2 - 225 = 0 \Rightarrow x^2 = 225 \Rightarrow x = \pm\sqrt{225} = \pm 15$$

Example: $4x^2 + 100 = 0$

$$4x^2 + 100 = 0 \Rightarrow 5x^2 = -100 \Rightarrow x^2 = \frac{-100}{4} \Rightarrow x = \pm\sqrt{-25} \text{ No real solution}$$