

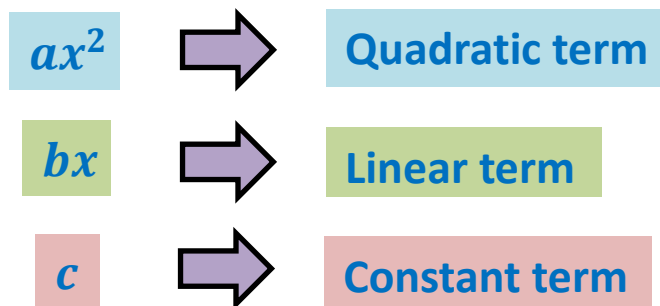
# Completing the Square

 Guided Notes

A **quadratic equation** is of the form:

$$ax^2 + bx + c = 0$$

Where,  $a \neq 0$ .



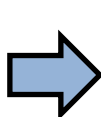
A **trinomial equation** is an equation having three terms or monomials on one side of the equation. The other side of the equation can be zero or a non-zero constant. It is written as:

$$ax^2 + bx + c = d$$

Where,  $a \neq 0$ .

## Completing Squares

This method is used when finding the solution of quadratic equations using square roots. If one side of the equation (having the trinomial) is not a perfect square, we can make it a perfect square by adding a suitable constant number on both sides of the equation.


$$x^2 + bx + \left(\frac{b}{2}\right)^2 = \left(x + \frac{b}{2}\right)^2$$

Note that the term being added is the square of half the coefficient of linear term i.e. ***b*** in ***x***.

Name: \_\_\_\_\_ Period: \_\_\_\_\_ Date: \_\_\_\_\_

## Completing the Square Guided Notes

**Problem 1:** What is the value of  $b$  such that  $x^2 - 14x + b$  is a perfect square trinomial?

**Problem 2:** What are the solutions of the equation  $x^2 + 2x = 35$ ?