

## *Linear Equation in one variable*

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A linear equation in one variable is an equation which has a maximum of one variable of order 1. It is of the form  $ax + b = 0$ , where  $x$  is the variable.

This equation has only one solution. Few examples are:

- $3x = 1$
- $22x - 1 = 0$
- $4x + 9 = -11$

Standard Form:  **$ax + b = 0$**

Where,

- 'a' and 'b' are real numbers, and
- both 'a' and 'b' are not equal to zero.

### **Solving Linear Equations in One Variable**

For solving an equation having only one variable, the following steps are followed:

Consider the equation:  **$5x - 9 = -3x + 19$**

Step 1: Convert it into standard form and simplify both sides of the equation:

$$5x - 9 + 3x = 19$$

$$\Rightarrow 8x - 9 = 19$$

$$\Rightarrow 8x = 19 + 9$$

$$\Rightarrow 8x = 28$$

Step 2: Using LCM, clear the fractions if any.

$$\frac{8x}{8} = \frac{28}{8}$$

$$\Rightarrow x = 28/8$$

Step 3: Isolate the variable.

We substitute  $x = 28/8$  in the equation  $5x - 9 = -3x + 19$ .

Step 4: Verify your answer.

We will get  $9 = 9$ , thereby satisfying the equality and giving us the required solution.