Algebraic Expressions:

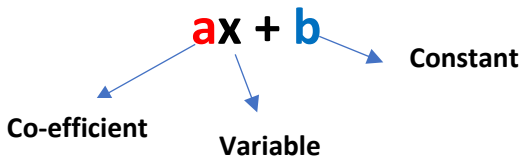
1. Any expression containing constants, variables, and the operations like addition, subtraction, etc. is called as an algebraic expression.
2. Some examples of algebraic expressions are $5x$, $2x - 3$, $x^2 + 1$, etc.

Equation:

1. Any mathematical expression equating one algebraic expression to another is called as an equation.
2. Some examples of equations are $5x = 25$, $2x - 3 = 9$, $x^2 + 1 = 0$, etc.

Linear Equation in One Variable: An equation is called linear equation if it has only one degree i.e., the highest power of the variable appearing in equation is 1, and the form of linear equation is

$P(x) = ax + b = 0$ (where are a and b are real numbers, $a \neq 0$)
e.g., $x + 5 = 0$



Solving Equations with Linear Expression

Question: $2x - 3 = 7$

Step 1: Transpose all the constant terms from the left-hand side to the right-hand side.
$2x=7+3=10 \Rightarrow 2x=10$

Step 2: Divide both sides of the equation by the coefficient of the variable.
In the above equation $2x$ is on the left-hand side.

The coefficient of $2x$ is 2.
On dividing the equation by two,

We get:
$12 \times 2x = 12 \times 10$
$\Rightarrow x = \frac{10}{2} = 5$, Which is the required solution.

Solving Linear equations that has variable on both sides:

Question: $3x - 3 = x + 2$.

Step 1: Transpose all the terms with a variable from the right-hand side to the left-hand side of the equation and all the constants from the left-hand side to the right-hand side of the equation.
$3x - x = 2 + 3$
$\Rightarrow 2x = 5$

Step 2: Divide both sides of the equation by the coefficient of the variable.
$12 \times 2x = 12 \times 5$
$\Rightarrow x = \frac{5}{2}$