

Introduction to Simple Equation

An equation is a mathematical statement that shows that two mathematical expressions are equal. For instance, $3x + 5 = 14$ is an equation, in which $3x + 5$ and 14 are two expressions separated by an 'equal' sign.

⇒ Example of an Equation:

$$4y + 2 = 18$$

$$4x^2 + 3x - 28 = 0$$

⇒ Solution of an Equation

The value of the variable which makes the equation a true statement is the solution of the equation.

Let us understand with an example:

Example: Verify that $x = 3$ is the solution of an equation $4x - 8 = -5 + 3x$

Solution: Substitute $x = 3$ in the given equation

$$\text{LHS: } 4x - 8 = 4(3) - 8 = 12 - 8 = 4$$

$$\text{RHS: } -5 + 3x = -5 + 3(3) = -5 + 9 = 4$$

$$\text{LHS} = \text{RHS}$$

So, $x = 3$ is the solution of an equation $4x - 8 = -5 + 3x$.