Simple Equations

- **Solving an equation by performing same mathematical operation on both sides:**

  It is known that an equation remains unchanged on adding or subtracting the same number on both sides. Therefore, using this property, an equation can be solved.

  Consider $3x - 7 = 2$

  Adding 7 on both sides, we obtain

  $3x - 7 + 7 = 2 + 7$

  $\Rightarrow 3x = 9$

  Dividing both sides by 3, we obtain

  $\frac{3x}{3} = \frac{9}{3}$

  $\Rightarrow x = 3$

  Therefore, $x = 3$ is the solution of $3x - 7 = 2$

- **Solving an equation by transposing the terms:**

  If a number is transposed from one side of an equation to the other, then its sign is changed.

  Example: solve $5(x - 7) = -25$

  Solution:

  $5(x - 7) = -25$

  Transposing 5 to R.H.S.

$\Rightarrow x - 7 = \frac{-25}{5}$

$\Rightarrow x - 7 = -5$

Transposing 7 to R.H.S.

$\Rightarrow x = -5 + 7$

$\Rightarrow x = 2$

- An algebraic equation is an equality involving variables. In an equation, the value of expression on the left hand side (LHS) is equal to the value of expression on the right hand side (RHS).