

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.

$$\Rightarrow x = -5 + 7$$

$$\Rightarrow x = 2$$