

# Chapter 4

## Simple Equations

### Equation

- An equation is a condition on a variable. A variable takes on different numerical values; its value is not fixed. Variables are denoted usually by letters of the alphabets, such as  $x$ ,  $y$ ,  $z$ ,  $l$ ,  $m$ ,  $n$ ,  $p$ , etc.
- An equation remains the same, when the expressions on the left and on the right are interchanged. This property is useful in solving equations.

### Solving an Equation

### Systematic Method

- The same quantity can be added to both sides of an equation without changing the equality.
- The same quantity can be subtracted from both sides of an equation without changing the equality.
- Both sides of an equation may be multiplied by the same non-zero number without changing the equality.

- Both sides of an equation may be divided by the same non-zero number without changing the equality.

### **Transposition Method**

- We can transfer (transpose) a term from one side to the other by changing its plus (+) sign to minus (-) sign or from minus sign to plus sign. This does not effect the equality of the statement.
- Transposing a number is the same as adding or subtracting the number from both sides.
- Transposition of an expression can be carried out in the same way as the transposition of a term.