Mathematical Operations

Type-I
Solving by Substitution
In this type of problems, you are required to simplify the given statement by substituting various signs and numerals as per given terms. To simplify a statement, the BODMAS rule is very useful.

Type-II
Interchanging of Signs and Numbers
In this type of problems, you would require to interchange the pair(s) of symbols/numbers. Simplify if asked the given statement(s) using BODMAS rule.

Type-III
Analysing the Conclusions
In this type of problems, relations between different statements are given in terms of mathematical operations (less than, more than etc.) A student is required to analyse amongst them to get correct conclusions.

EXAMPLE

Consider the following statements.
'A @ B' means 'A is not greater than B'.
'A © B' means 'A is not smaller than B'.
'A # B' means "A is neither greater than nor equal to B'.
'A $ B' means "A is neither smaller than nor equal to B'.
Assuming the given below statements to be true, analyse which of the two conclusions I and II is/are definitely true and choose your option accordingly.
Statements: P @ Q, Q © R, R # S.
Conclusions: 1. P $ R   II. R $ P
(a) Only I is true   (b) Only II is true   (c) None is true   (d) Both are true

Explanation (c):
We have
$A@B \Rightarrow A \not> B \Rightarrow A \leq B$

$A©B \Rightarrow A \not< B \Rightarrow A \geq B$

$A \# B \Rightarrow A \not> B$ and $A \neq B \Rightarrow A < B$

$A \$ B \Rightarrow A \not< B$ and $A \neq B \Rightarrow A > B$

Given statements: $P \leq Q$, $Q \geq$. R, R < S.
Relationship between P and R: $P \leq Q$, $Q \geq$. R
$\Rightarrow$ No definite relationship between P and R.
Hence none of I and II is true.