B 21- Inequality

Examples With Explanation

In the following question, the symbol @,©,%,☆ and $ are used with the following meaning as illustrated below.

'P © Q' means 'P is not greater than Q'.
'P $ Q' means 'P is not smaller than Q'.
'P @ Q' means 'P is neither smaller than nor greater than Q'.
'P ☆ Q' means 'P is neither greater than nor equals to Q'.
'P % Q' means 'P is neither equal to nor smaller than Q'.

Now in each of the following questions assuming the given statements to be true, find which of the three conclusions, 1,2, 3 given below them is/are definitely true and give your answer accordingly

Example 1

Statements

→ A © B,

→ B @ C

→ C ☆ D

→ D$ E

Conclusions:

I. D % A
II. C$ A
III. B ☆ D

SOLUTION:

- First and foremost step bring these statements to their simplest form by understanding them and writing whatever signs they represent.

'P © Q' means 'P is not greater than Q' –here no other information is given that means P can be either smaller than or equal to Q .
So P © Q - P_< Q (P smaller than or equal to Q) similarly,
P $ Q - P>_Q (P is not smaller than so it must be greater than or equal to Q)
P @ Q - P=Q (as P is not greater nor smaller to Q)
P ☆ Q - P <Q (as P is not greater or equal to Q)
P % Q - P>Q (as P is not smaller or equal to Q)

- **Tip: you can avoid writing P and Q every time, because only symbols and signs matter, quickly jot down the symbols and write signs opposite them**.
- Next step convert the given question to its original form i.e. A © B, B @ C, C ☆ D, D$ E A_<B=C<D_>E

Conclusions:

I. D % A – D>A
II. C$ A – C_>A
III.B ☆ D - B<D

Now forget everything just remember you are going to solve this using only signs without thinking too much about which is greater or equal or

lesser etc.
Remember all you need here is to expertise in looking at signs

- **Clues : A_<B=C<D_>E**
- You can easily find the relationship between two alphabets by looking at the signs if they face same direction or opposite direction.
- Remember when the same direction then the conclusion will be definitely true or either case and when signs are opposite then no relationship can be found.
- Say From A to D " < " sign is in the same direction so conclusions can be A<C OR A= C **(you cannot say here which one is definitely true "either" case forms but you are sure A>C CANNOT be possible)**
- Going with the signs A_<B=C<D your conclusions will be D is always greater than c and A, D can't equal C or Anas sign is only "<" this restricts any alphabet to be greater than D.So here, A<D with A_<C

C<D Don't get confused friends logic is only" sign" if you have "< "in facing the same direction that means definitely or if you have "_< " facing the same side means two cases of equal or greater.

- **Similarly:** when the signs are in opposite directions their relationship can never be defined .in our example from A_<B = C<D_>E considering (C<D_>E) The relationship of C and E cannot be defined.You can only say D=E OR D>E OR C<D but you CANNOT say the relationship beyond that Taking the full equation A_<B=C<D_>E, no relationship can be identified with E in any case apart from D say A<E or C < E. these are all totally unanswerable or cannot be defined Once you understand the concept you could easily and quickly do this. Let's answer the question now ➢A_<B=C<D_>E

Conclusions:

I. D % A – D>A or A<D (relation between A to D is to be found so A_<B=C<D
Same direction meaning this is true but now you can question me will this be only "< or = ".friends from C< D there is clear relation of C being smaller than D , there is no relation of C_<D, C restricts D with this < sign meaning C is itself smaller than D how can other be greater
If the case was A_<B=C_<D_>E (then you could say A_<D)
Therefore this conclusion is true

II. C$ A – C_>An or A_<C (looking above equation A_<B=C if u write B=c then replacing B as c A_<C, this is true)

III. B ☆ D - B<D (B =C < D is true clearly)

Example 2

Statements

→P ☆ Q

→Q © R

→R % S

→S $ T

Conclusions:

I. T ☆ R

II. P☆ R

III. Q © T

Solution

Bringing it to the original form

P<Q_<R>S>_T

Conclusions:

I. T ☆ R - T<R (from the statement we need only relation for T and R so just look from T to R R>S_>T or T_<S<R, same side signs so relation exists and S restricts R's relation with " < " sign making the statement definitely true)

II. P☆ R - P<R (look only from P to R P<Q_<R same side sign so relation exists , and Q is only _< toR, not P so the given conclusion is true , if the above statement was P_<Q_<R then P _<R would have been true)

III. Q © T – Q_<T (writing from Q to T Q_<R>S_>T here signs are not same between Q and T so definitely no relation exists, so this is false)

Example 3

Statements:

K = B ≥ A < S = T ≤ R

Conclusions:

I. B = T

II. R > A

Solution:

I. B = T (from B to T B ≥ A < S = T opposite signs so at one glance you can say no relation formed so false)

II. R > An or A<R (from R to A A<S=T_<R same side signs, true, conclusitruemeaning some relation exists A restricted by S with "conclusive if the statement had
A ≤ S = T ≤ R then A≤R would have been the answer meaning 'either case")

Example 4

Statements:

A > B = C, C > D, E < D = F

Conclusion:

I. B > F

II. A < D

Solution:

Simplifying this statement we get

A_>B=C>D=F>E

I. B > F (from B to F B=C>D=F clearly B>F, so true)

II. A < D (from A to D A_>B=C>D relation exists same side signs but look it's A<D not A> D so this is false).