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Sol:- Let s be the smallest member of a set S

then (i) $s \in S$

and (ii) $s \leq x \ \forall x \in S$

$\Rightarrow$ s is a lower bound of S.

Let s_1 be any number $> s$

then $s_1 > s$ and $s \in S$

$\Rightarrow$ s_1 can not be a lower bound of S.

Hence s is the infimum (g.l.b) of the set S

Example (3) prove that the greatest member of a set, if it exists, is the supremum (l.u.b) of the set.

Sol:- Let G be the greatest member of S.

then (i) $G \in S$

and (ii) $x \leq G, \ \forall x \in S$

and so G is an upper bound of S.

Let G_1 be any number $< G$, $G \in S$.

i.e. $G_1 < G$ then G_1 can not be an upper bound of S

Hence G is the l.u.b (supremum) of S.

Q(7) Is the converse of the solved example (3), true?

ANS:- NO, because supremum may or may not belong to the set but greatest member must be belong to the set.