Exercise 1.5.5

$(\leq, F)$ is totally orderder field

$A \subseteq F$ and l (lower band) of A exists.

Since F is complete sup A ~~is~~ exists

Suppose we have $B \subseteq F$, and all elements of B are smaller than or eaual to all elements of A.

Then $\sup B = \operatorname{Inf} A$, hence $\operatorname{Inf} A$ exists

More Formally

$$B = \{b \in F \mid b \leq a \text{ for all } a \in A\}$$

B is non-empty since A is lower banded

B is banded above (all elements of A

$\sup B \leq a$ for all $a \in A \Rightarrow$ it a lower band of A

If c is a lower band of A, then $c \leq \sup B$

so $\sup B$ is the greatest lower band