ZR (13)

P1: ($\Rightarrow$) Suppose $B \in R$.

$\exists$ non-empty $A \subseteq \mathcal{L}_{(\infty)}$

s.t. $B = \bigcup_{a \in A} \mathcal{L}a$

We are given that

$B \neq \phi$ & $B \neq \mathcal{L}_{(\infty)}$.

(ii) Suppose $b \in B$.

and $b_0 \leq_a b$ with $b_0 \in \mathcal{L}_{(\infty)}$

$\exists a \in A : b \in \mathcal{L}a$

Hence $b_0 \in \mathcal{L}a$

as $b \in B$

(iii) holds for $\mathcal{L}a$ as ideal of $\mathcal{L}a$