**4.** Suppose not, then  $\alpha > \beta$ . We know that  $\alpha \le x$  and  $x \le \beta$ ,  $\forall x \in E$ . This is due to the fact that  $\alpha$  is a lower-bound and  $\beta$  is an upper-bound to E. Then

$$x \ge \alpha > \beta$$
,

which is a contradiction.