Let X be an ordered topology. Show that

$\overline{(a,b)} \subset [a,b]$, let $c \in (a,b)$

then $a < c < b$ so $c \in [a,b]$, thus $(a,b) \subset [a,b]$

$\overline{(a,b)} = \bigcap_{i \in I} A_i$, A_i is closed and contains (a,b). in particular $[a,b]$ and thus

$\overline{(a,b)} \subset [a,b]$