1. Show every nonempty finite set of real numbers has a greatest element (i.e. if $A$ is finite then $\sup A \in A$). Hint: Prove by induction on $m$ that if $I_m \sim A$ then $A$ contains a largest element.

2. Prove that if $A \subseteq \mathbb{Z}$ and $A$ is bounded from below then $A$ has a least element (i.e. $\inf A \in A$).