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. $\inf A \in A$).