# Least greatest proofs

**Prove** or **disprove**: There is a least prime number.

**Prove** or **disprove**: There is a greatest integer.

*Approach 1, De Morgan's and universal generalization*:

*Approach 2, proof by contradiction*:

*Extra examples*: Prove or disprove that $\mathbb{N}$, $\mathbb{Q}$ each have a least and a greatest element. Prove that there is no greatest prime number.

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