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.
Gcd def
Greatest common divisor Let a and b be integers, not both zero. The largest integer d such that d is a factor of a and d is a factor of b is called the greatest common divisor of a and b and is denoted by $gcd(a, b)$