

Proof by contradiction that primes are infinite

$$P = p_1 \cdot p_2 \cdot p_3 \cdot p_4 \cdot p_5 \cdots p_n \quad \text{Finite list}$$

$$P+1 \neq p_x$$

1. There is a new prime not accounted for
2.  $P$  is not a complete list
3. Primes are infinite

QED