Satz $\sqrt{2} \notin \mathbb{Q}$

Beweis $\sqrt{2} = \frac{p}{q}$, $(p, q) = 1$, $q \neq 0$.

$2 = \frac{p^2}{q^2} \iff p^2 = 2q^2$ (*)

p^2 gerade $\Rightarrow$ p gerade, d.h. $p = 2 \cdot p_1$

$4p_1^2 = 2q^2 \iff 2p_1^2 = q^2 \Rightarrow$

q gerade $\lightning$