Remark 3.j.26. *[2F2]* *Cantor proved that* $|\mathbb{N}| < |\mathbb{R}|$. *Cantor then (in 1878) formulated the* continuum hypothesis *CH: for any infinite set $E \subseteq \mathbb{R}$, either $|E| = |\mathbb{R}|$ or $|E| = |\mathbb{N}|$. For many year mathematicians tried to prove (or disprove) CH. It took decades to understand that this was not possible. We know know that, if ZF is consistent, then neither CH nor its negation can be proven as theorems in ZF (even using the Axiom of Choice). The second part of the statement was proved by Gödel nel 1939. The first part by Cohen in 1963. See Chap. 6 in [?].*