Theorem (2.4.37). *Let A, and B be sets such that $A \subseteq B$. If A is uncountable, then B is uncountable.*

Proof. By the hypothesis, $|A| > \aleph_0$ by the definition for countability since A is uncountable. By the definition for subset, the cardinality of B is at least the cardinality of A. Therefore the least cardinality for B is $|B| > \aleph_0$, and it follows that B is uncountable. ■