

Cantor-Schroder-Bernstein Theorem: To prove $|A| = |B|$, we can do any **one** of the following

- Prove there exists a bijection $f : A \rightarrow B$;
- Prove there exists a bijection $f : B \rightarrow A$;
- Prove there exists two functions $f_1 : A \rightarrow B$, $f_2 : B \rightarrow A$ where each of f_1, f_2 is one-to-one.
- Prove there exists two functions $f_1 : A \rightarrow B$, $f_2 : B \rightarrow A$ where each of f_1, f_2 is onto.

Claim: \mathbb{Z} is countably infinite