Example 1

$2\mathbb{N}$

Let $2\mathbb{N}$ be the set of even positive integers, then $|2\mathbb{N}| = \aleph_0$.

- Let $f \colon \mathbb{N} \to 2\mathbb{N}$, where $f(x) = 2x$;
- if $x \neq y \implies f(x) \neq f(y)$, so injective;
- clearly surjective.
- thus bijective!

Weird fact

Note that $|2\mathbb{N}| = |\mathbb{N}|$, but $2\mathbb{N} \subsetneq \mathbb{N}$.
This doesn't happen for finite sets!