

2. a) If there is an injection from \mathbb{N} to a set A , then A is countable.

b) If there is an injection from a set A to \mathbb{N} , then A is countable.

3. If $f:A \rightarrow B$ and $g:B \rightarrow C$ are surjective functions, then $g \circ f$ is surjective.

4. a) If $f: A \rightarrow B$ has an inverse function g , then g has f as an inverse function also.

b) Let $f: A \rightarrow B$ be a bijective function. Then there exists an inverse function g for f .

5. a) If $f:A \rightarrow B$ and $g:B \rightarrow C$ are functions and $g \circ f$ is injective, then f is injective.

b) If $f:A \rightarrow B$ and $g:B \rightarrow C$ are functions and $g \circ f$ is injective, then g is injective.

