

- Ok, so why do we call bijective functions invertible?
- Because they can be inverted!

Theorem

Let $f: A \rightarrow B$ be a bijection. Then there exists $g: B \rightarrow A$ with

$$g(f(x)) = x, \quad \forall x \in A, \quad f(g(y)) = y \quad \forall y \in B. \quad (1)$$

- 1 g is called the **inverse** of f , sometimes denoted f^{-1}
- 2 Note that $f^{-1} \circ f: A \rightarrow A$ and $f \circ f^{-1}: B \rightarrow B$
- 3 One is the identity transformation on A and the other on B