Source:

1 | **What is a function?**

A function $f : D \to C$ is a unary operation that takes every element in the domain D to exactly one element in the codomain C.

$f(x) = x^2$ is a function over the domain of reals.

2 | **A 1:1 function or bijection**

A 1:1 function is a function f for which there exists a function g such that $g\left(f(x)\right) = x$ for all $x \in D$.