

**Source:**

## 1 | What is a function?

A function  $f : D \rightarrow C$  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 injective function

A 1:1 function takes at most one element in the domain to any element in the codomain. A bijective function is a function  $f$  for which there exists a function  $g$  such that  $g(f(x)) = x$  for all  $x \in D$ .

$f(x) = x^2$  is not a 1:1 function, because \*