

# Security - function - ii

## Problem Statement

We now know the definition of functions.

If  $f(x) = y$ , such that  $x \in X$  and  $y \in Y$  then  $y$  is called an image of  $x$  and  $x$  is called the preimage of  $y$ .

Given  $x_1, x_2 \in X$  and  $y_1, y_2 \in Y$

$f(x_1) = y_1$  and  $f(x_2) = y_2$

we call the function  $f : X \rightarrow Y$  as 1-1 (one-to-one) if

$$f(x_1) = f(x_2) \implies x_1 = x_2$$

Let us define one such one-to-one function  $f_2 : X \rightarrow X$ , such that  $f_2(x) = x^2$

where  $X = \{1, 2, 3, 4, \dots\}$  The function defined in the previous challenge is not one-to-one as

$$f_1(0) = f_1(11) = 0, 0 \neq 11$$

Your task is to complete the function which takes  $x$  as input and return  $x^2$

## Constraints

$$1 \leq x \leq 1000$$