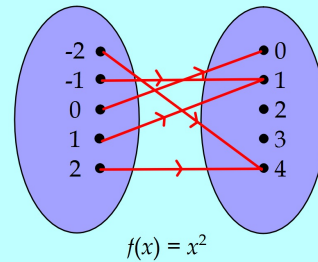


# Functions

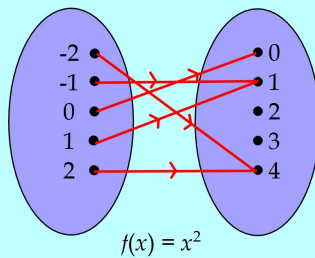
## Functions

A function is a rule which assigns each member of set A uniquely to a member of set B.

(exactly one  $y$  value is assigned to each  $x$  value).



## Functions



Set A is the DOMAIN  $\{-2, -1, 0, 1, 2\}$   
 Set B is the CO-DOMAIN  $\{0, 1, 2, 3, 4\}$

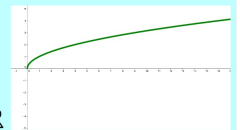
The subset of B which is the set of all images of the function is the RANGE  $\{0, 1, 4\}$

Often restrictions have to be applied to provide a suitable Domain and Range.

### Examples

$$f(x) = \sqrt{x} \quad \text{Domain } x \geq 0, x \in \mathbb{R}$$

$$\text{Range } f(x) \geq 0, f(x) \in \mathbb{R}$$



$$f(x) = \frac{1}{x-1} \quad \text{Domain } x \neq 1, x \in \mathbb{R}$$

$$\text{Range } f(x) \neq 0, f(x) \in \mathbb{R}$$

