

## Definition: Function

*A relation from a set of inputs to a set of possible outputs where each input is related to exactly one output. In other words a function  $f$  is a set of ordered pairs  $(x, y)$  such that for any  $x, y, z$  if we have  $(x, y) \in f$  and  $(x, z) \in f$ , then we must have  $y = z$ .*

## Examples

- $\{(2, 4), (-2, 4)\}$  is a function
- $\{(4, 2), (4, -2)\}$  is not a function