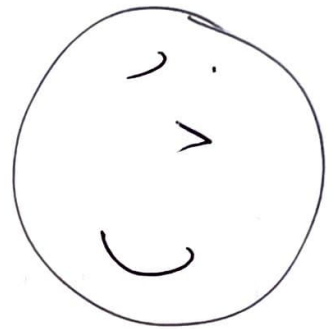


Injective functions

$$f: A \rightarrow B.$$

- $\forall a_1, a_2 \in A$, if $a_1 \neq a_2$ then $f(a_1) \neq f(a_2)$
- $\forall a_1, a_2 \in A$, if $f(a_1) = f(a_2)$ then $a_1 = a_2$.



NB. (check the codomain ...)

Injective (1-1):

Every element in the codomain is the image of at most one element of the domain. ("at most one" (≤ 1)).

Surjective (onto):

Every element in the codomain is the image of at least one element of the domain. ("at least one" (≥ 1))

Bijective (injective AND surjective)

Every element in the codomain is the image of exactly one element of the domain. (at most AND at least one ($= 1$))