Let A and B be sets. A <u>function</u> f from A to B is a rule that assigns an element f(a) of B to each element a in A.

The set A is called the <u>domain</u> of f and the set B is called the co-domain of f.

We write $f: A \to B$ to indicate that f is a function from A to B.

For a function f to be a 'relabelling' it needs to satisfy the conditions:

- $f: A \to B$ is <u>onto</u> if for each element $b \in B$ there is an element $a \in A$ such that $f(a) = b$.
- $f: A \to B$ is <u>one-to-one</u> if for all $a, a' \in A$ if $f(a) = f(a')$ then $a = a'$.