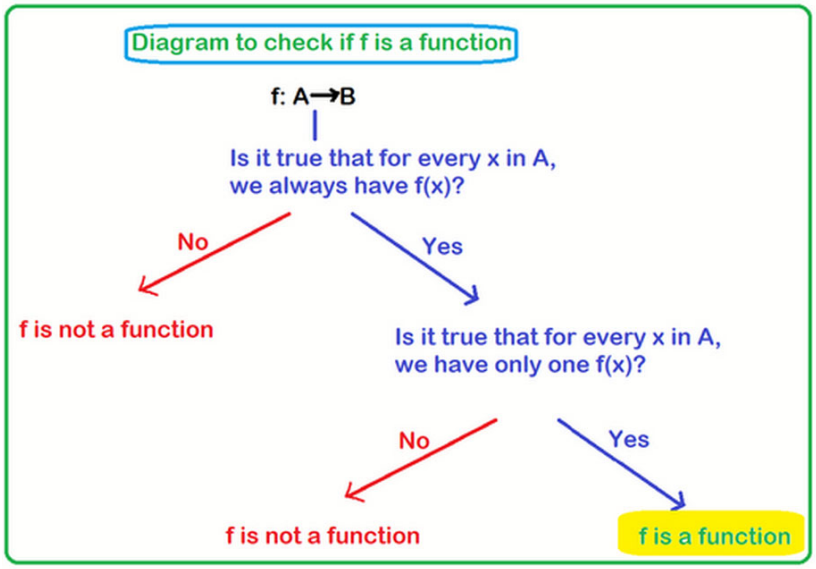
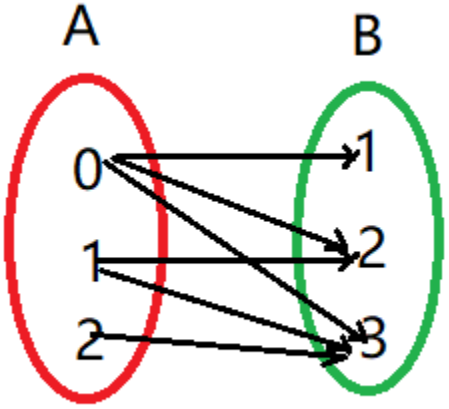
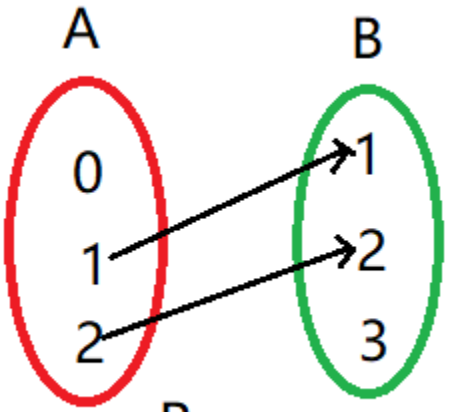
Relation R from A to B	Function from A to B
Definition: Subset of $A \times B$	
Examples: $A = \{0,1,2\}$ and $B = \{1,2,3\}$ $xR_1y \leftrightarrow x < y$ Then $R_1 =$ $\{(0,1), (0,2), (0,3), (1,2), (1,3), (2,3)\}$ $(1,2)\ \}$	$A = \{0,1,2\}$ and $B = \{1,2,3\}$ $f(x) = y \leftrightarrow y = 1 + x$ Then $f(0) = 1,\ \ f(1) = 2,\ \ f(2) = 3.$ The graph of f is $\Gamma(f) = \{(0,1), (1,2), (2,3)\}$

$$xR_2y \leftrightarrow x = y$$ Then $R_2 = \{(1,1),(2,2)\}$.	$$g(x) = y \leftrightarrow y = \lvert x-1\rvert + 1$$ Then $$g(0) = 2, \quad g(1) = 1,$$ $$g(2) = 2$$ The graph of g is $$\Gamma(g) = \{(0,2),(1,1),(2,2)\}$$
<u>Domain and Range</u> Domain of R_1 $$A = \{0,1,2\}$$ Range of R_1 $$B = \{1,2,3\}$$ Domain of R_2 $$\{1,2\}$$ Range of R_2 $$\{1,2\}$$	Domain of f $$A = \{0,1,2\}$$ Range of f $$B = \{1,2,3\}$$ Domain of g $$A = \{0,1,2\}$$ Range of g $$\{1,2\}$$

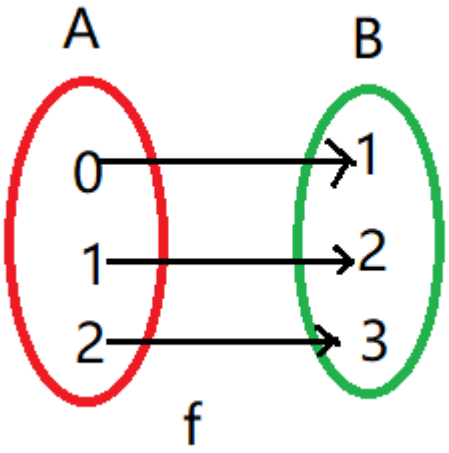
Arrow Diagram



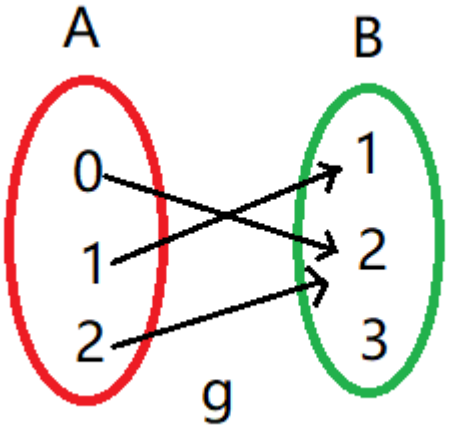
R_1



R_2

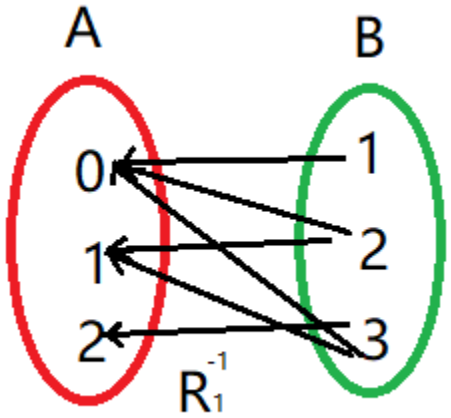


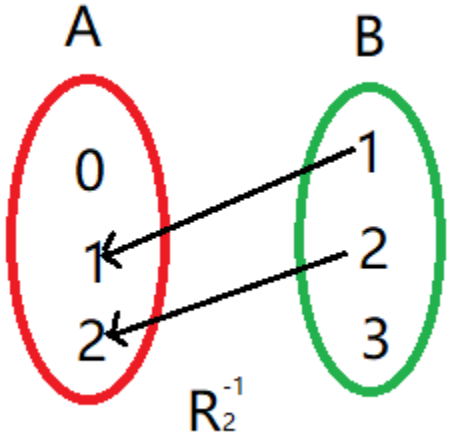
f

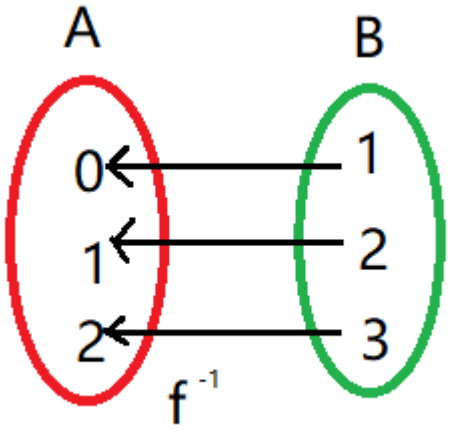


g

Inverse







The inverse function of g does not exist.