



Why

If x is related to y , the y is related to x , but how?

Definition

If R is a relation between X and Y , then the *converse* or *inverse* relation of R is a relation on Y and X relating $y \in Y$ to $x \in X$ if and only if $x R y$. If $R = R^{-1}$ then R is symmetric.

Notation

We denote the converse relation of R by R^{-1} .

Example

Let X be the set of people and let R be a relation in X . If R is “is a father of”, then R^{-1} is “is a son of”. If R is “is a mother of”, then R^{-1} is “is a daughter of”. If R is “is a brother of”, then R^{-1} is “is a brother of”. The relation “is a brother of” is symmetric.

