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Relations on Sets

Notes

- Given an ordered pair (x, y) in $A \times B$, we say that **x is related to y by R**, written:

$$x \ R \ y \text{ if, and only if, } (x, y) \in R.$$

- Inverse of a Relation
  Let R be a relation from A to B. Define the inverse relation R^{-1} from B to A as follows:

$$\text{For all } x \in A \text{ and } y \in B, \ (y, x) \in R^{-1} \leftrightarrow (x, y) \in R.$$

Test Yourself

1. x is related to y by R
2. x is not related to y by R
3. $(x, y) \in \mathbf{R}$
4. A to A
5. $x \ R \ y$