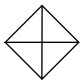


Why

Does a set exist of all the ordered pairs of elements from an ordered pair of sets?

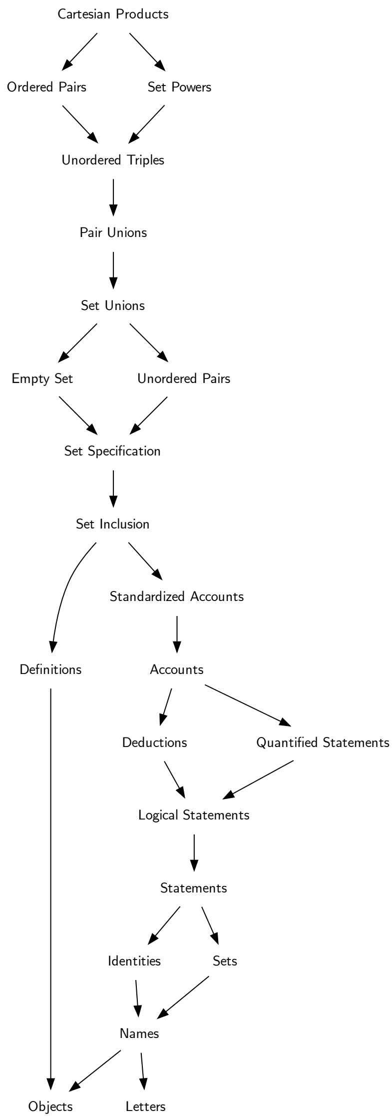
Definition

Indeed. Let A and B denote sets and let a and b denote objects. If $a \in A$ and $b \in B$, then $\{a\} \subset A$ and $\{b\} \subset B$ and so $\{a\}, \{b\}, \{a, b\} \in (A \cup B)^*$.

The *product* of the set denoted by A and the set denoted by B is the set of all ordered pairs. This set is also called the *cartesian product*. If $A \neq B$, the ordering causes the product of A and B to differ from the product of B with A. If $A = B$, however, the symmetry holds.

Notation

We denote the product of A with B by $A \times B$, read aloud as "A cross B." In this notation, if $A \neq B$, then $A \times B \neq B \times A$.


Cartesian Products
Ordered Pairs
Set Powers
Unordered Triples
Pair Unions
Set Unions
Empty Set
Unordered Pairs
Set Specification
Set Inclusion
Standardized Accounts
Definitions
Accounts
Deductions
Quantified Statements
Logical Statements
Statements
Identities
Sets
Names
Objects
Letters