Operations

1 Why

We want to "combine" elements of a set.

2 Definition

Let A be a non-empty set. An *operation* on A is a function from ordered pairs of elements of the set to the same set. Operations to *combine* elements. We *operate* on ordered pairs.

2.1 Notation

Let A be a set and $g : A \times A \to A$. We tend to forego the notation $g(a, b)$ and write $a\,g\,b$ instead. We call this *infix notation*.

Using lower case latin letters for elements and for operators confuses, so we tend to use special symbols for operations. For example, $+$, $-$, $\cdot$, $\circ$, and $\star$.

Let A be a non-empty set and $+ : A \times A \to A$ be an operation on A. According to the above paragraph, we tend to write $a+b$ for the result of

Operations

$\downarrow$

Functions

$\downarrow$

Relations

$\downarrow$

Ordered Pairs

Empty Set   Unordered Pairs

Set Specification

Set Inclusion

Sentences   Set Equality

Sets   Identity