



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 $g : A \times A \rightarrow A$. 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 $+$: $A \times A \rightarrow A$ be an operation on A . According to the above paragraph, we tend to write $a + b$ for the result of applying $+$ to (a, b) .