Why

We can construct functions on the ground set of an algebra by fixing an element in the ground set and defining a function which maps elements to the result of the operation applied to the fixed element and the given element.

Definition

Let $(A, +)$ be an algebra. For each $a \in A$, denote by $+_a : A \to A$ the function defined by

$$+_a(b) = a + b.$$

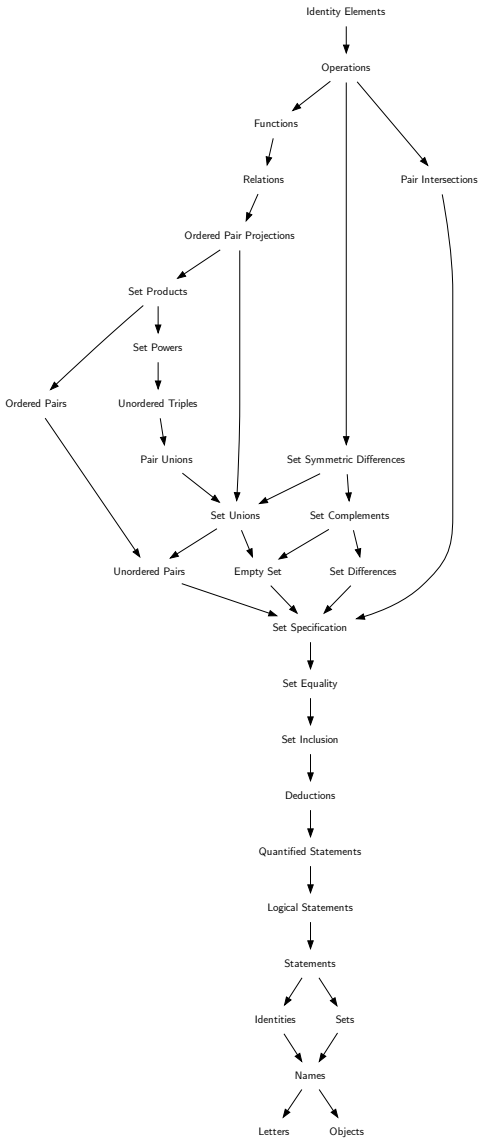
If $+_a$ is the identity function on A then we call a a *left identity element* of the algebra.

Similarly, denote by $+^a : A \to A$ the function defined by

$$+^a(b) = b + a.$$

If $+^a$ is the identity function on A then we call a a *right identity element* of the algebra.

An *identity element* of the algebra is an element which is both a left and right identity. If the operation commutes, then a left identity and right identities are the same.


Identity Elements
Operations
Functions
Relations
Pair Intersections
Ordered Pair Projections
Set Products
Set Powers
Ordered Pairs
Unordered Triples
Pair Unions
Set Symmetric Differences
Set Unions
Set Complements
Unordered Pairs
Empty Set
Set Differences
Set Specification
Set Equality
Set Inclusion
Deductions
Quantified Statements
Logical Statements
Statements
Identities
Sets
Names
Letters
Objects