



Why

We often have two algebras for which we can identify elements of the ground set.

Definition

Let $(A, +_A)$ and $(B, +_B)$ be two algebras.¹

An *isomorphism* between these two algebras is a bijection $f : A \rightarrow B$ satisfying:

$$f(a +_A a') = f(a) +_B f(a')$$

and

$$f^{-1}(b +_B b') = f^{-1}(b) +_A f^{-1}(b').$$

If there exists an isomorphism between two algebras we say that the algebras are *isomorphic*.

¹Future editions will change this notation to avoid clashes with right and left identity elements (see **Identity Elements**).

