Scalar Multiple Sets

1 Why

2 Definition

The *scalar multiple* of a subset of a vector space *by* a given scalar is the set of all vectors which are the scalar product of the given scalar and the vector.

The *symmetric reflection* of a subset of a vector space is the scalar multiple by the additive inverse of the field. A subset of a vector space is *symmetric* if it is its own symmetric reflection.

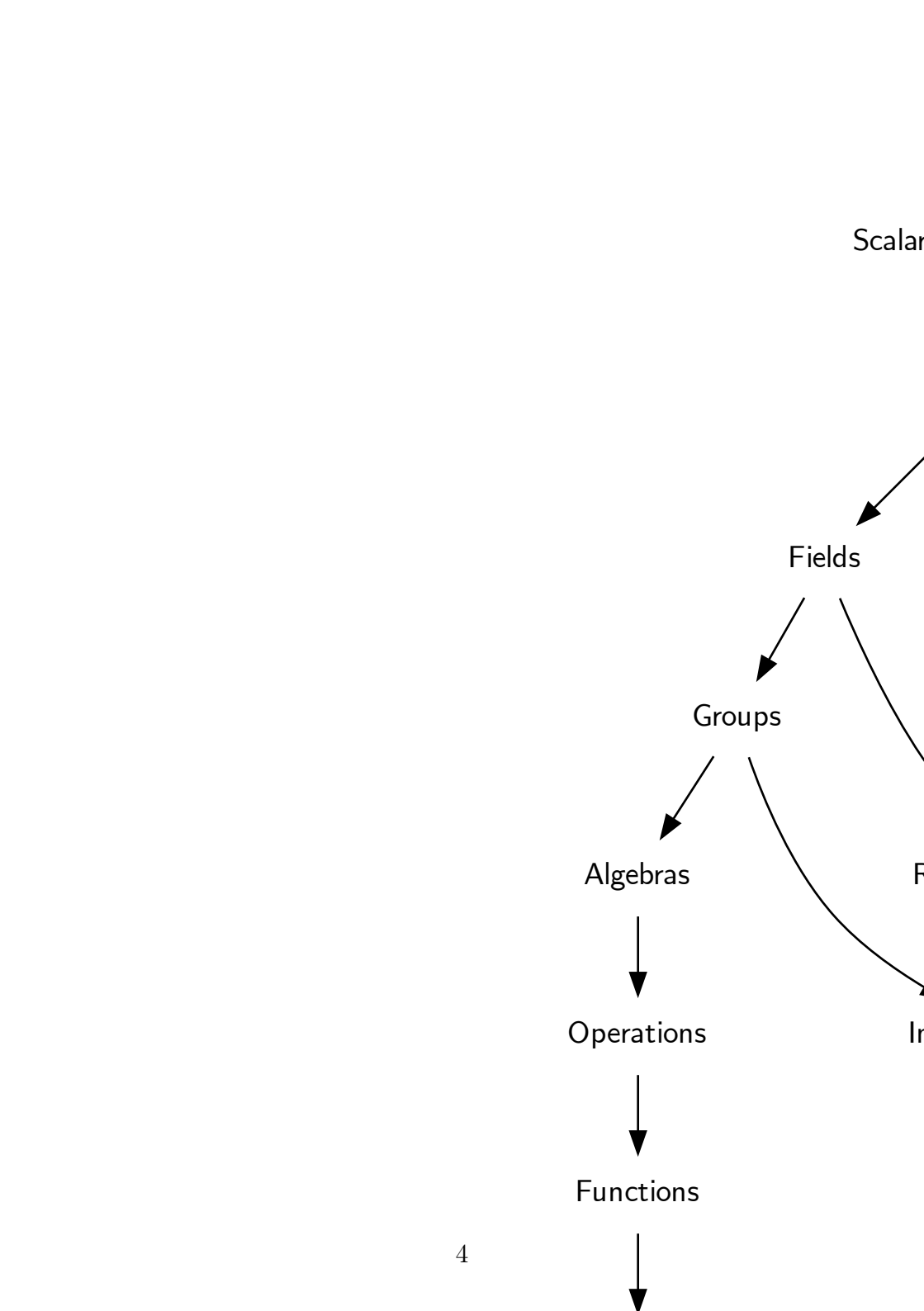
2.1 Notation

Let $(V, \mathbf{F})$ be a vector space. Let $M \subset V$ and $\lambda \in \mathbf{F}$. The scalar multiple of M by λ is the set

$$\{\lambda x \mid x \in M\},$$

which we denote by λM.

The symmetric refletion of M is $(-1)M$ which we denote by $-M$. M is symmetric if $M = -M$.


Scalar
Fields
Groups
Algebras
Operations
Functions