

Mathematical Foundation

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Abstract

This Document contain my notes about Axioms, Definitions and basic theories.

I Real Numbers

I.1 Fields

In rigorous mathematics real number is a set of numbers defined as a complete, ordered field

- DEF. *Field* is a non-empty set on which two binary operation are defined refer to Group theory and Set theory
- DEF. *Binary Operation* in field \mathbb{F} is a function that "take" an ordered pair of element and "return" an element in \mathbb{F} , and it said to be the operation on the set whose both domain and codomain in the same set. TODO

$$\forall a, b \in \mathbb{F} (\exists c \in \mathbb{F}) : (c = a \circ b)$$