

Math Remark

Algebraic Structure

X

ElegantL^AT_EX Program

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1 Number System

Without talking some basic knowledge of Mathematics logic, we generally define the object we want to study: Number System is a set of "number" and equipped by certain operations. Here "number" is not necessary a real number like 1,2,3 we face daily in calculation, later we will aware that "number" is actually a represent of a system, or using the language of the category, a normal system like \mathbb{N} is just a represent object we choose in a category $Cat(\mathbb{N})$ (The collection of the system same as \mathbb{N}).

The main goal of this part is to construct the different number system begin from the natural number \mathbb{N} , the procedure often can be found in the textbook and the exercise, and the extension of distinct system inspire us to define the new algebra object.

1.1 The integer \mathbb{Z}