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Numbers

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Chapter 1

The integers

We construct the integers starting from the natural numbers \mathbb{N} . Since `lean` already has a type called \mathbb{Z} , we define a new type called `MyInt` that will be another definition of the integers. `MyInt` will be a quotient of a type called `MyPreint`.

Definition 1. `MyPreint` Let `MyPreint` be $\mathbb{N} \times \mathbb{N}$

Definition 2. `MyPreint.R` We define a relation on `MyPreint` as follows: (a, b) and (c, d) are related if and only if

$$a + d = b + c$$