Contents

0.1 Cardinality of the natural numbers

Consider the infinite set, that is the set of all natural numbers which is defined in ZFC. Clearly there isn't a natural number cardinality of this – we instead write $\aleph_0$.

We call sets with this cardinality, countably infinite.

So:

$|\mathbb{N}| = \aleph_0$

0.1.1 Cardinality of natural numbers

We define:

$|\emptyset| = 0$

That, the empty set has a cardinality of 0.

As we define 0 as the empty set, $|0| = 0$.

What is 1? using the definition above we know $|1| > |0|$, so let's say $|1| = 1$, and more generally:

$\forall n \in \mathbb{N} |n| = n$