

Appendix 4

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0.1 Real Numbers

0.1.1 Dedekind Cuts

Motivation

Recall the definitions:

- The set \mathbb{N} of natural numbers, $1, 2, 3, 4, \dots$
- The set \mathbb{Z} of integers, $0, 1, -1, -2, 2, \dots$
- The set \mathbb{Q} of rational numbers p/q where p, q are integers, $q \neq 0$.

It is clear that $\mathbb{N} \subset \mathbb{Z} \subset \mathbb{Q}$