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Principles of mathematics. A primer.

Hoboken, NJ: John Wiley & Sons (ISBN 978-1-119-13164-9/hbk; 978-1-119-13169-4/ebook). xiii, 654 p. (2016).

The first four chapters of the book cover a general introduction into mathematics. The chapters are: Set theory, Logic, Proofs and Functions. The themes are treated rather deeply. For instance the chapter on sets also covers the integers, the rational numbers and the reals and even transfinite numbers. The first chapter comes quickly into a discussion of set theoretic problems and the Gödel theorems. Chapter 5 is on group theory. It covers the first steps into group theory as normal subgroups and the isomorphism theorems. An introduction into linear algebra is given in Chapter 6 consisting of nearly 200 pages. Standard material is covered here such as basis, linear transformations, the general linear group, systems of linear equations, determinants and eigenvalues. The book has many examples and exercises to help the reader. There are no prerequisites necessary in order to start reading. Nevertheless some parts are quite abstract to read.

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Classification: E35 E45 H65 H45 I25 H35 E65

Keywords: introductory mathematics; linear algebra; group theory; logic; functions; sets