This text is the second edition of Simpson’s indispensable book on reverse mathematics. Except for correction of a very few typographical errors, an updated preface, and the addition of three bibliographic entries, this version is unchanged from the first edition [Subsystems of second order arithmetic. Perspectives in Mathematical Logic. Berlin: Springer (1999; Zbl 0909.03048)]. In particular, the numbering of all results is identical in both editions, so either edition may be used to look up specific references in the reverse mathematics literature.

Reviewer: Jeffry L. Hirst (Boone)

MSC:
03-02 Research exposition (monographs, survey articles) pertaining to mathematical logic and foundations
03B30 Foundations of classical theories (including reverse mathematics)
03F35 Second- and higher-order arithmetic and fragments
03C62 Models of arithmetic and set theory

Keywords:
reverse mathematics; RCA; recursive comprehension; WKL; weak König’s lemma; ACA; arithmetical comprehension; ATR; arithmetical transfinite recursion; \(\Pi_1^1\) comprehension; beta model; omega model; Hilbert’s program