Jónsson algebra is explained in detail. There is also an application to the calculation of the cofinality of partial orders of the form $([\lambda]^\kappa, \subseteq)$, where $[\lambda]^\kappa$ is the set of all subsets of λ that have cardinality κ. Specifically, it is shown that for any infinite cardinal κ and any non-zero $\alpha < \kappa$, $\mathrm{cf}([\kappa^{+\alpha}]^\kappa, \subseteq) = \max \mathrm{pcf}\{\kappa^{+(\beta+1)} : \beta < \alpha\}$. This is one example from a rich collection of theorems in ***Cardinal arithmetic*** and subsequent works of Shelah concerning the relationship between covering numbers and pcf's. These results are quite useful in cardinal arithmetic and related areas. In addition to Shelah's original works, a good source for further theorems relating cofinalities and pcf's is an elegant recent article on pcf theory by Uri Abraham and Menachem Magidor, *Cardinal arithmetic*, which is available at www.cs.bgu.ac.il/~abraham/math.html and which will appear in the ***Handbook of set theory***, to be published by Kluwer.

Chapter 9 covers Shelah's pp function. For singular cardinals λ, $\mathrm{pp}(\lambda)$ is the supremum of all cardinals of the form $\mathrm{cf}(\prod \mathsf{a}/D)$, where a is a cofinal set of regular cardinals in λ, a has cardinality $\mathrm{cf}(\lambda)$, and D is an ultrafilter on a that contains all final segments of a. In ***Cardinal arithmetic***, Shelah proposes that $\mathrm{pp}(\lambda)$ is the "true" $\lambda^{\mathrm{cf}\lambda}$. One advantage it has over $\lambda^{\mathrm{cf}\lambda}$ is that its value is much harder to change by forcing. For example, the results of Chapter 7 imply that $\mathrm{pp}(\aleph_\omega) < \aleph_{\omega_4}$. Versions of the Galvin–Hajnal theorems from Chapter 2 are established for the pp function.

A couple of the proofs in the text contain minor gaps. (1) On page 109, the proof of Lemma 2.2.1 (the case of the free set lemma where the domain is a set A of regular cardinality κ and the set mapping K satisfies $|K(a)| < \lambda < \kappa$ for all $a \in A$) seems to go wrong at the end. The $\subseteq$-maximal set $\mathcal{P}$ of pairwise disjoint popular sets at the end of the proof could be simply $\{A\}$ (if each $K(a)$ is non-empty). This is easily repaired, but the entire argument can be worded more succinctly: denoting $X \cup \bigcup\{K(x) : x \in X\}$ by $H[X]$, for $\xi < \lambda$, inductively choose a maximal independent subset X_ξ of $A \setminus \bigcup_{\eta<\xi} H[X_\eta]$. Then $|X_\xi| = \kappa$ for some $\xi < \lambda$, for otherwise $\bigcup_{\xi<\lambda} H[X_\xi]$ has size $< \kappa$ and for any $a \in A$ not in this set the maximality of each X_ξ and the fact that $a \notin K(x)$ for any $x \in X_\xi$ gives $K(a) \cap X_\xi \neq \emptyset$ for all $\xi < \lambda$, contradicting $|K(a)| < \lambda$. (2) The proof of Theorem 9.2.4, on page 277, introduces a club-guessing sequence for $S = \Sigma_{\mu,\aleph_0}$, using Lemma 4.5.3 to justify its existence. But Lemma 4.5.3 assumes that S is contained in a set of the form $\Sigma_{\kappa,\mu}$ where μ is uncountable. The proof of Lemma 4.5.3 for $\mu = \aleph_0$ is similar but somewhat harder. In ***Cardinal arithmetic*** the required result is Claim 2.3(2) of Chapter III. It can also be found in a useful preprint of Menachem Kojman entitled *The A,B,C of pcf: a companion to pcf theory, part I*, available at the time of writing of this review at www.cs.bgu.ac.il/~kojman. This preprint also contains several other club-guessing principles and develops the basic results of pcf theory using the coherent sequences that are discussed in ***Cardinal arithmetic*** in §0 of the *Analytical guide* on page 436.

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Stevo Todorcevic. ***Topics in topology.*** Lecture notes in mathematics, vol. 1652. Springer, Berlin, Heidelberg, New York, etc., 1997, viii + 153 pp.

Faithfully to its title, this book is an author's personal selection of several diverse topics in topology. It grew out of a set of lecture notes from a graduate course given by Todorcevic at the University of Toronto during the fall of 1995. The book consists of four independent chapters, each covering a different "topic" in general topology.

The first chapter is the longest and most extensive one. It is entitled *Compact sets in function spaces* and it considers $C_p(X)$, the space of continuous functions with respect to the topology of pointwise convergence on a Polish space X. The goal of Chapter I is to give