from the pattern recognition problem: given a finite set A_1, A_2, ..., A_n of characters, e.g., printed letters (with any letter considered identical in all its occurences), to obtain a device with the inputs A_i and the corresponding outputs i.

The main tools used are combinatorics, relations and semi-groups; proofs are elementary but often intricate. The book is not elementary nor, in spite of its title, introductory, and it is quite technical; however, it should be of considerable interest to its limited audience.

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Theory of Value, (Monograph 17, Cowles Foundation), by G. Debreu. John Wiley and Sons, New York, 1959. xii + 114 pages. $4.75.

The pervasive influence of Bourbaki is spreading - this book might be sub-titled: Economics a la Bourbaki. There are seven chapters: 1) Mathematics, 2) Commodities and Prices, 3) Producers, 4) Consumers, 5) Equilibrium, 6) Optimum, 7) Uncertainty, each provided with short bibliographical notes, a general bibliography of four and a half pages and a fairly exhaustive index. The central chapters are 5) and 6) in which the previously developed machinery is used to prove rigorously some general theorems on the existence of equilibria for an economy, and on optimal equilibria. The first chapter contains in its 27 pages the necessary set-theory, theory of relations, topology, real numbers, functions, continuity, vector spaces, convexity and fixed-point theorems; it is very pleasing to see the statement that "...it requires, in principle, no knowledge of mathematics". However, these concepts are illustrated as they come to be used, e.g., a set is connected if it is of one piece, etc. The notation is quite unnecessarily heavy with sub-, super-, and in-scripts and iterated indices. In brief, this is an excellent intro-duction to an important branch of economics for mathematicians and for those economists who have an iron determination and a very patient mathematician at their private disposal.

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