for the involved functions the existence and continuity of certain partial derivatives with respect to x; (b) at various places in Chapters 3, 4, 5 there are statements to the effect that for a function $f(y_1, \cdots, y_n, x)$ the existence and boundedness of partial derivatives $\partial f/\partial y_j$, $(j=1, \cdots, n)$, in an open set $\mathfrak{A}$ of $(y_1, \cdots, y_n, x)$ space implies that in $\mathfrak{A}$ the function f satisfies a Lipschitz condition in $(y_1, \cdots, y_n)$, which is clearly not true without the added assumption of convexity of the intersections of $\mathfrak{A}$ with hyperplanes $x=$constant.

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Analog methods in computation and simulation. By W. W. Soroka. New York, McGraw-Hill, 1954. 14+390 pp. $7.50.

Modern technology must be based on a scientific analysis of the problems considered. At first glance this might seem to require a precise solution or at least a numerically valid solution to the mathematical formulation of the problem. However, this is not quite true. The basic information necessary for technical decisions may be available from the study of an analogous system under the control of the investigator. In these circumstances mathematics plays a somewhat different role. The basic problem is not the solution of the mathematical problem, but the establishment of the analogy, that is the similarity of the mathematical equations governing the two systems. The important question is the uniqueness of the solution rather than its construction.

The principle of analogy is well established in engineering. For many years, problems in power distribution, the vibrational response of elastic structures and their stress distribution, air vehicle stability, and a whole host of model studies have been based on analogy. Since the war, there has been a considerable development of electrical analog equipment which has considerable advantages in flexibility of set up, availability, and ease of operation over most other types. It is also true, however, that the many nonelectrical analogies have continued to advance. Each of these tends to have a field of optimum application where the results obtained by the specified method are the most appropriate available.

The present book is organized to survey the field relative to the various engineering applications. There is considerable introductory material relative to the realization of mathematical operations. The major analogies treated are those based on "lumped" electrical circuit theory including commercial electronic differential analyzers and the network analogies for elasticity and the theory of structures, those associated with the finite difference expressions for partial dif-