<u>Differential and difference equations</u>, by Louis Brand. John Wiley and Sons, New York, 1966. xvi + 698 pages. U.S. $11.95.

As the reader reads the first two chapters of this book, his impression is that it is a reasonably standard text in elementary differential equations, covering methods of solutions of various types of first-order equations (including a few more than the reviewer would consider desirable) and applications (including a greater variety of interesting examples than is now customary).

This impression is reinforced in the succeeding five chapters on linear equations and systems with applications, and the Laplace transform. However, there are also some pleasant surprises in this portion of the book, such as a discussion of stability of solutions of linear equations with constant coefficients. In this discussion, the terms "strictly stable" and "metastable" are used, rather than the now more common "asymptotically stable" and "stable", respectively. The study of systems of linear equations includes the treatment of systems with constant coefficients by means of linear algebra, Lyapunov's second method, and some discussion of periodic solutions and limit cycles.

As the reader begins Chapter 8, he discovers that this is not just another elementary differential equations text. He enters a study of linear difference equations which emphasizes the extent to which the treatment parallels the treatment of linear differential equations. This portion of the book, giving an elementary exposition of valuable material not usually discussed in undergraduate texts, may be the most useful part for most readers.

The book concludes with standard material on series solutions, boundary value problems, numerical methods, and existence theory together with another useful chapter on uncommon material - Mikusinski's operational calculus. This chapter, dealing with operational methods for both differential and difference equations, shows the close relation between the Heaviside calculus, with its weird and wonderful solutions to many problems, and real life.

To sum up, this is a text in elementary differential equations covering mainly standard material in mainly standard ways, plus an interesting exposition of some related topics which are usually either not taught or not related to ordinary differential equations. The book contains more than enough material for a year course, and a variety of good semester courses can be constructed from it by proper choice of material.

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<u>Topology</u>, Vol. I., by K. Kuratowski. (Translated from the French by J. Jawaroski.) Academic Press, London and New York, PWN - Polish Scientific Publishers, Warsaw, 1966. xx + 560 pages. U.S. $18.50.

This new edition of the work on point set topology is a revision of the 1958 French edition with some new material added. In particular, a large portion of the results concerning metric spaces have been generalized and now appear in the chapter on topological spaces. Recent results on the exponential topology and on semi-continuous mappings have also been included in Chapter 1. The bibliographical references have been brought up to date.

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