basic knowledge in the field). The book is well organized and, also from the pedagogical point of view, very carefully written. If examples are given, they are chosen such that they form an important part of the text. Furthermore the book contains some 90 diagrams and flow diagrams which are helpful for an easy understanding of the text.

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Handbuch der mathematik, by L. Kuipers and R. Timman. Walter de Gruyter Co., Berlin, 1967. 830 pages. DM. 48.

The book originates from lectures given by various authors at the Technical University of Delft (Netherlands). It is intended to be a general source of information about mathematics for scientists and engineers. In fact all the standard courses taught at a Technical University are treated in considerable extent so that the book may also prove to be very useful for mathematicians working in applied fields. It is clear from the concept of the volume that a more general view of the theories is preferred to a detailed discussion of every proof. There is only a short paragraph about computer programming.

Contents: 1. C.H. van Os : History of Mathematics, (18 pages); 2. F. Loonstra : Number Systems (15 pages); 3. F. Loonstra : Linear Algebra (26 pages); 4. F. Loonstra : Analytic Geometry (37 pages); 5. B. Meulenbeld : Calculus of One and Several Variables (106 pages); 6. L. Kuipers : Sequences and Series (36 pages); 7. H.J.A. Duparc : Theory of Functions (70 pages); 8. S.C. van Veen : Ordinary Differential Equations (46 pages); 9. S.C. van Veen : Special Functions (65 pages); 10. R. Timman : Vector Analysis (52 pages); 11. R. Timman : Partial Differential Equations (58 pages); 12. L. Kosten : Numerical Analysis (119 pages); 13. J.W. Cohen : Laplace Transforms (65 pages); 14. J. Hemelrijk : Probability and Statistics (84 pages).

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Differential and integral calculus, by F. Erwe. Translation by B. Fishel of the 1964 German edition. Hafner Publishing Co., New York, 1967. x + 494 pages. U.S. $9.25.

This book rather naturally invites comparison with the well-known two-volume work by Courant : it is more compact; contains a number of ingenious and elegant treatments; has few problems and no exercises; and does not go so deeply into some of the applications.

The weakest point is the introduction, which gives the impression that the author has heard of the modern definition of a function but does not in his heart believe it. No harm will be done to the student who starts with Chapter I or Chapter II and realizes that when $f(x)$ occurs f is often meant.

The book starts by treating sequences (using upper and lower limits) and makes effective use of them later, particularly in the treatment of integrals. This section goes as far as uniform convergence, and it may well be that, although it is unusual to find this topic so early in a text, this is the right place for it. The essential topological properties (the Heine-Borel Theorem, etc.) are also dealt with early.

The treatment of continuous functions follows the same plan: uniform continuity is dealt with early, and this leads to an elegant treatment of the exponential function which is defined as the sum of the exponential series and proved continuous as a simple corollary of the "M-test".

After the chapters on functions of one variable there is a brief but well-written section on linear algebra, which enables functions of several variables to be dealt with in a more modern spirit than most of the book.

The reviewer particularly liked the treatment of curves. The author makes quite clear what he means by a curve : it is a set of equivalent parametrizations. The corresponding set of points is the carrier-set of the curve. Not only does the author make this clear definition, but he cleaves to it in all the subsequent working. The definitions are immediately followed by a good treatment of rectifiability, and the section ends with a discussion of continuous deformation of a path, and simple-connectedness.

The treatment of integrals is comprehensive, and is exceptionally clear, considering the difficulty of the material. There is an illuminating treatment of Jordan measure economically introduced by defining the Jordan measure of M to be the Riemann integral over M of the constant (function whose value is) 1. Surface-integrals are introduced via alternating differential forms, and Stokes' Theorem is elegantly quoted (in Cartan's form).

Perhaps this a long review for an under-graduate text, but I found this book refreshingly and interestingly different from the usual texts at this level.

H.A. Thurston, University of British Columbia

Calculus for beginners, by W.L. Ferrar. Oxford University Press, 1967. vi + 194 pages. Cloth. Canad. $8; paperbound edition available.

This book is an attempt to simplify the calculus as far as possible within the obvious limits, which the author in fact states in his preface : "I have taken great pains to ensure that the future mathematician could, without detriment to his later work, begin his study of calculus from this book". Compared with the classic of the genre - Silvanus Thompson's Calculus made easy - the present book is technically much simpler, but conceptually, is less drastically simplified. On the one hand, the reader is presumed to have so little technique that he is reminded in the introduction, under the headings "Plus before the bracket" and "Minus before the bracket" that $a + (x-y) = a + x - y$, whereas $a - (x-y) = a - x + y$. On the other hand, there is nothing as striking as Thompson's principle that "dx means a little bit of x".

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