

The book begins with a rapid description of the properties of and the operational manipulations of the one-sided Laplace transform. There is a deliberate omission of details in order to meet the desire of the engineer to arrive *in medias res* as quickly as possible. Such tools as the Riemann-Lebesgue theorem are dismissed with a reference. On the other hand the authors give an exposition of the Fourier double integral (with a Lipschitz condition for local restriction), feeling that this tool is so near to the heart of the subject as to be indispensable. The applications include: differential systems involving electrical circuits, Abel's integral equation, heat conduction, Thomson's cable. No table of transforms is included since extensive tables are now easily available elsewhere. The book concludes with a brief historical appendix not intended to be systematic but rather to shed light on particular aspects of the theory.

The authors frequently use an illuminating intuitive approach that ought to be very valuable for the class of readers expected. In the present reviewer's opinion the book could have been more useful if a careful statement of results (even if unproved) had been added. For, must not the applied scientist know the range of validity of his results?

D. V. WIDDER

*A course of geometry.* By R. N. Sen. Calcutta University Press, 1953. 36+311 pp. 12 rupees.

The book has an outlook similar to Graustein's *Higher geometry*. The content in terms of chapters is as follows: An algebraic introduction called Basic algebra, then eleven chapters on plane geometry entitled: Vectors and angles; Cross ratio; Rigid motions; Conics; Transformations of symmetry and similarity; The circle (includes inversion); Affinity; Involution (of pencils of points or lines); Geometry in the extended Cartesian plane; Collineation and correlation; Geometry in the projective plane with an appendix on Trilinear and areal coordinates. The remaining eight chapters deal with space geometry and are entitled: The Euclidean space; Projective space (here we find for the first time an independent definition of projective space, as contrasted to an extension of the Euclidean space); groups of transformations and classification of geometries (deals with Klein's Erlanger Programm); Projective theory of quadrics; Polarity; Geometry in the extended Cartesian space; Orthogonal transformation and affinity; Quadrics in Euclidean space with an appendix on the Law of Inertia for quadratic forms.

The treatment is quite predominantly algebraic. The book is easy to read and very clear in the small; however, the non-initiated will

not recognize a clear overall structure. Also, the fundamental principles are not presented as poignantly as one might wish. A typical example is the statement that Brianchon's Theorem is proved by dualizing the proof of Pascal's Theorem, instead of emphasizing that the duality principle makes a separate proof unnecessary.

H. BUSEMANN

*Vorlesungen über die Theorie der Integralgleichungen.* By I. G. Petrovskij. Würzburg, Physica-Verlag, 1953. 100 pp. 7.80 DM.

This is a clear and concise exposition in less than one hundred pages of the classical theory of integral equations. Unfortunately while the book undoubtedly fills a need for Russian speaking students—it was originally written in that language—a German edition seems to me redundant. There is little that cannot be found in the opening chapters of Courant-Hilbert.

The book contains a useful table of analogies between finite-dimensional space and Hilbert space (as a function space), and an appendix in which the author shows the advantage of Lebesgue integration in developing the theory of symmetric kernels. The Fredholm theory is done, not by the famous method of Fredholm determinants, but by E. Schmidt's method of approximation by degenerate kernels.

There is little in the way of illustrative material or exercises.

HARRY POLLARD

*Atti del Quarto Congresso dell' Unione Matematica Italiana tenuto in Taormina nei giorni 25-31 Ottobre 1951.* Rome, Perrella, 1953. Vol. 1, 9+324 pp.; vol. 2, 2+684 pp. 9000 lire.

The first volume contains addresses and the second contains abstracts of papers presented to the Congress.

*Opere.* By L. Bianchi. Ed. by the Unione Matematica Italiana with the assistance of the Consiglio Nazionale delle Ricerche. Vol. 1, part 2. Rome, Perrella, 1953. 4+278 pp. 2500 lire.

For part 1 see this Bulletin, vol. 59, p. 416. Part 2 contains papers on elliptic normal curves, continuous groups, and partial differential equations; and biographical articles.

*Opere.* By U. Dini. Ed. by the Unione Matematica Italiana with the assistance of the Consiglio Nazionale delle Ricerche. Vol. 1. Rome, Perrella, 1953. 6+699 pp. 600 lire.

Dini's works are to appear in 3 volumes. This one contains papers on algebra and differential geometry.