
These two additional volumes of exercises in analysis continue in the same spirit as that of the first volume which was reviewed by E. Hille in this Bulletin, vol. 35, p. 739. Indeed the method adopted for all three books is the same, namely that of treating (solving) each of a relatively small number of problems in several very distinct ways and of comparing the different methods employed in these solutions. The volumes constitute a set of varied exercises which figure in the programme of certification of the differential and integral calculus at the École Normale Supérieure, the Sorbonne, and other schools. They in no sense replace the material of Goursat’s Cours d’Analyse, but are, rather, companion volumes designed primarily for those students preparing for the examinations of the licence and the agregation. Some of the exercises are new while others have been taken from past examinations. In volume 2 (analysis), Chapters 2 and 4 and parts of Chapters 1 and 5, being descriptive in character, are more like the standard text-book. The third volume (differential equations) is given over wholly to the 45 problems contained therein.

Most of the problems have at least two solutions, some have as many as four. The results as well as the methods employed are made use of in applications which accompany the solutions; and there are such applications or remarks associated with almost every exercise. The tables of contents themselves number 12 pages and 17 pages, respectively. It would not be feasible, therefore, to consider here and in detail the variety of topics discussed; but the chapter headings of the two volumes will give some indication of the scope of the works. These are, in condensed form: vol. 2, (1) Analytic functions, (2) Development in series, (3) Residues, (4) Analytic transformations, (5) Conformal mapping; vol. 3, (1) Methods of integration (in which are treated integration by quadratures, Riccati’s equation, etc.), (2) Linear equations (with special reference to singular points, transformations, etc.), (3) Singular integrals.

It is evident that the high standards of achievement required of the French student of mathematics can be matched by no such requirements even in the very best of our American universities.

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Lehrbuch der höheren Mathematik für Universitäten und Technische Hochschulen.


These two volumes will be followed by a third; the three volumes were prepared by Professor Kowalewski (Dresden) after nearly thirty years teaching experience. Beginning with analytic geometry he develops a wide variety of mathematical topics following an order of arrangement and methods of presentation which are not customary to American texts. In the first volume, Vektorrechnung und Analytische Geometrie, after defining vectors, vector operations, and vector properties, he uses vector notions to develop the theory and use of homogeneous coordinates for the points of a plane and of a line, the transformation of coordinates, principal properties of determinants, some geometric properties of triangles and quadrilaterals, homogeneous and non-