

function it would be better to emphasize the notion of *correspondence* rather than dependence. Graphs of the elementary functions are given and a short treatment of fitting functions to empirical data is included. In many places the notion of a limit is used but nowhere is limit defined. The fundamental relations of increments, derivatives and differentials are well presented. We are glad to find theorems on infinitesimals which are needed in setting up problems and which are frequently neglected when the calculus is approached from the standpoint of limits.

The part on differential equations seems too short. Integration by partial fractions is omitted. An illustrative problem would have emphasized the importance of the constant of integration. Some illustrations of the use of the definite integral are needed to make plausible their statement that "The concept of the definite integral is the most useful concept in the application of the calculus."

The promised parts on "Functions of Two or More Variables," "Numerical Computation," and on "Elementary Dynamics" have not yet appeared so far as the reviewer is aware.

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*Einführung in die höhere Mathematik.* By HANS VON MANGOLDT. Vol. I: *Anfangsgründe der Infinitesimalrechnung und der analytischen Geometrie.* 1911. xiv+477 pp. Vol. II: *Differentialrechnung.* 1912. xi+566 pp. Vol. III: *Integralrechnung.* 1914. x+485 pp. Leipzig, S. Hirzel.

THE volumes before us constitute an important contribution toward the solution of a problem which is of great concern to the majority of teachers of mathematics. That problem has to do with the amount and arrangement of the mathematical methods to be included in courses for students of physics and of engineering. We are of course agreed that there must be included the analytical geometry of two and of three dimensions, differential and integral calculus. But though we realize the deficiencies of the traditional college courses in these subjects, we are not well agreed as to the remedy. There are on the one hand those who claim that the student in question need only learn when and how certain formulas should be used, on the other hand those who would teach all mathematical courses merely as if they were an