sets of zero measure. The second chapter covers functions, continuity, uniform convergence, approximations to continuous functions, linear functions, Dini derivatives, monotone and convex functions, ending with some interesting results about infinitely differentiable functions.

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The Extension of Darboux's Method, by D.H. Parsons. Mémorial des Sciences mathématiques 142, Gauthier Villars, Paris, 1960. 75 pages. $4.25 or 20 NF.

This tract of 75 pages describes the author's theory of a certain class of partial differential equations of the second order in three independent variables. The work is an extension of Darboux's method for equations with two independent variables, which in turn arose from the work of Monge, Ampere, and Laplace on the explicit solution by quadratures of partial differential equations.

For the purposes of his work the author uses a modified definition of a characteristic as an integral element of contact of a suitable order n, which satisfies a further total differential equation. The rank of the partial differential equation is defined by means of a discriminant, and the author shows that for ranks 1 or 2 there are respectively 1 or 2 distinct systems of characteristics of each order $n > 2$. If the equation has rank 3, there are no characteristic multiplicities and this theory does not apply.

The relationship of involution is defined for pairs of equations, one of which is of rank 1 or 2, and the author gives necessary and sufficient conditions that two equations should be in involution. Such equations possess an infinity of common integrals and have in common a characteristic of each order greater than n. The author shows how knowledge of another equation in involution with a given one enables the problem of finding the characteristics to be reduced.

It is shown that if there exists one characteristic system of order 2 with 5 invariants, then an integral can be found by solving the partial differential equations of the first order. The work concludes with a number of special cases and examples. An extension of these theorems to equations with m independent variables is stated without discussion.

This is an intricate work in the classical style, in which a subject that has long resisted generalization has been made to yield successful and interesting results.

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