In 14, games G of two players A, B with physical positions P, Q, ... and moves (P, A) → (Q, B), (P', B) → (Q', A), ... are considered. The corresponding bicoloured digraph C(G) has vertices (P, A), (Q, B), ... being coloured A, B respectively. A central concept of 14 is that of remoteness which is an integral measure for optimal play: if A (B) can force winning A (B) tries to win as soon as possible, and if A (B) cannot prevent losing A (B) tries to postpone the defeat as long as possible. More generally selective, conjunctive and disjunctive compounds are considered, i.e. sets of games of two players A, B where at each step A (B) moves in some, in all, in exactly one of the component games respectively. For selective and conjunctive compounds the remoteness is defined and studied. For the study of disjunctive compounds the concept of Sprague-Grundy function is developed. For example, the Sprague-Grundy function f of the game G, the graph of which contains no cycles, is defined inductively for the vertices of C(G) : f(v) is the least non-negative integer different from f(v') for all vertices v' in which ends an edge from v.

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Progress in mathematics. Edited by R.V. Gamkrelidze. Translated from the Russian. Plenum Press, New York, 1968.

Vol. 1 : Mathematical analysis, ix + 246 pages. U.S. $15.00.
Vol. 2 : Mathematical analysis, viii + 161 pages. U.S. $15.00.

These volumes which are translations of Itogi Nauki-Seriya Matematika give a survey of recent work on mathematical analysis. The first volume contains three articles and the second contains two, each supplemented with an impressive list of references. Concepts and Notations are defined carefully to make these surveys readable by mathematicians moderately familiar with the general field. Important results are given in the form of theorems while for others, which are too big or involved, a brief indication is given. The text and bibliography are both sufficiently detailed and systematic to serve as reliable guides in the topics discussed. The five articles in the two volumes are as follows.

Operational Calculus, by V.A. Ditkin and A.P. Prudnikov (74 pages and 486 references) gives a brief survey of Mikusinski's operational calculus and related topics including operational calculus on a finite interval, and on the whole axis, operational calculus in several variables and operational calculus using Bessel operators. Fantappié's analytic functionals, numerical methods and some applications of operational calculus are mentioned.

Spaces of Analytic Functions by V.P. Khavin (93 pages and 330 references) gives a general description of investigations made in recent years related to the application of the theory of topological normed linear spaces to problems concerning functions of one and more complex variables. It includes, among other topics, the relation between boundary values of analytic functions and generalized functions (distributions), Hardy's H^p-spaces, interpolation problems and axiomatic theories of functions, and spaces of vector-valued functions.

Operational Differential Equations, by V.V. Nemytskii, M.M. Vainberg, and R.S. Gusarova (78 pages and 330 references) gives a review of recent work on the theory of differential equations in linear spaces. The linear and non-linear differential equations with bounded operators are discussed in the first part. The abstract Cauchy problem for linear equations with unbounded operators is

considered in the second part where the use of semi-groups has been made.

The Theory and Methods of Investigation of Branch Points of Solutions, by M.M. Vainberg and P.G. Aizengendler (72 pages and 181 references) reviews the methods developed during the past five years of obtaining solutions of non-linear problems depending on parameters for some values of which the solution has branch points. The Lyapunov-Schmidt method in Banach spaces and the investigations on ramification of small solutions and singular solutions are included.

Imbedding and Continuation for Classes of Differentiable Functions of Several Variables defined in the Whole Space, by V.I. Burenkov (89 pages and 330 references) is a review paper discussing results on the subject published between 1961 and 1965. It is in continuation of an earlier review by S.M. Nikol'skii (English translation: On Imbedding, Continuation, and Approximation Theorem for Differentiable Functions [Russian Mathematical Surveys, Vol. 16 (5) 55-104. London Math. Soc.]) in which pre-1961 results were discussed.

These books give an exciting picture of the work being done in the areas discussed. They should be valuable reference volumes to researchers in analysis.

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