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(These summaries may be reproduced)

JAROSLAV KRÁL, Praha: *Some very effective methods of searching in tables.* Apl. mat. 14 (1969), 1—14. (Original paper.)

In this paper several methods for constructing tables without repetition of items are studied from the probabilistic point of view. Formulae for expected values of the number of examinations of the kind "is x placed in cell T_i in a table T?" are given. The situation when a table T is placed on a backing store of a computer and segmented is also considered. Described methods are very useful in many systems of information processing.

A. CHARNES, W. W. COOPER, K. O. KORTANEK: *Semi-infinite programming, differentiability and geometric programming:* Part II. Apl. mat. 14 (1969), 15—22. (Original paper.)

The authors deal with a certain specialization of their theory of duality on the case where the objective function is simple continuously differentiable and convex on the set K of the admissible solutions and the constraint functions defining K are continuously differentiable and concave. Further, a way is shown how to generalize the account to the case where the constraint functions of the problem are simple piecewise differentiable and concave. The obtained conditions can be considered as a generalization of Kuhn-Tucher's theorem.

JAROSLAV HROUDA, Praha: *On a classification of stationary points in nonlinear programming.* Apl. mat. 14 (1969), 23—28. (Original paper.)

In the paper the definition of the regular stationary point (M. Altman) is extended to be embracing all the points to which the method of feasible directions can converge if used without respect to the regularity condition.

JAROSLAV HROUDA, Praha: *Two minimax-type methods for solving systems of nonlinear equations.* Apl. mat. 14 (1969), 29—53. (Original paper.)

The system of equations $h_i(x) = 0$ $(i = 1, \ldots, r;\ x \in E_n)$ is solved by means of iterative methods of minimization of the functions A) $\max_i h_i(x)$ under the conditions $h_i(x) \geqq 0$, B) $\max_i |h_i(x)|$. These methods are derived from the Zoutendijk's method of feasible directions. A good deal of attention is paid to their numerical aspects.

JOSEF DVORČUK, Praha: *Factorization of a polynomial into quadratic factors by Newton method.* Apl. mat. 14 (1969), 54—80. (Original paper.)

In this paper the method for simultaneous finding of all the roots of a polynomial is derived. The method is based on the factorization of a polynomial into quadratic factors. The method is designed for the polynomial with real coefficients. It is derived by using the Newton method. The quadratic convergence of this method is proved for given good guesses of the roots and for the polynomial with distinct roots. Algorithm of the method is described in Algol 60.