CONTENTS

Abstract: This paper presents a variant of Karmarkar's projective algorithm for linear optimization. If the descent direction is obtained through a classical Newton-type method, the line search is done on a minorant function. This claim is confirmed by many interesting numerical tests and show the efficiency of this approach, which are presented in the last section of this paper.

Abstract: Let R be a finite ring and $r \in R$. We introduce the concept of r-commuting probability of R which is the probability that the commutator of a randomly chosen pair of elements of R equals r. We obtain a computing formula and some bounds for this probability. Further, we characterize some classes of finite rings through this probability.

Abstract: In this paper, by using a new identity we establish some new Simpson's inequalities for functions whose modulus of the first derivatives are h-preinvex. Some known results are derived. Applications to special means are given.

Abstract: In this paper, we introduce weakly semicommutative modules as a generalization of semicommutative modules and study their properties. We prove that if a left R-module M is weakly semicommutative, then for any $n \in \mathbb{N}$, set of all upper triangular matrices $T_n(M)$ over M is weakly semicommutative $T_n(R)$-module. We show that localizations of weakly semicommutative modules are weakly semicommutative. Examples of weakly semicommutative modules which are not semicommutative are given and we prove some relevant results.

Abstract: In this paper, we investigate subclass of analytic function with negative co-efficient defined by Catas operator in the unit disc $U = \{z \in C : |z| < 1\}$. The results included coefficient estimates, closure theorem and distortion theorems of several functions belonging to this subclass. Also, we presented detailed study of uniformly convex and uniformly starlike functions.

Abstract: Here are introduced abstract left and right Riemann-Liouville generalized fractional Bochner integral operators of variable order acting over Banach space valued functions. Also are introduced abstract weighted Caputo type left and right fractional derivatives of variable order. Then, we derive abstract left and right fractional integral inequalities of variable orders of Opial, Hardy and Hilbert-Pachpatte types. We give applications to simple Riemann-Liouville fractional integrals of variable order for real valued functions.

Abstract: In the present paper, some deterministic and random fixed point theorems related to several Prešić-type mappings have been investigated. The fixed point theorems proved in this paper due to like Prešić-type mapping are stochastic generalizations of some deterministic fixed point theorems. Moreover, the Ulam-Hyers stability and limit shadowing property of a random fixed point problem have been studied by us. As a consequence, an application has been shown to ensure the existence of random solution of a non-linear stochastic integral equation.

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