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P. N. Natarajan

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Zhi-Gang Wang and Yue-Ping Jiang

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Ekaterine Kapanadze and Tengiz Kopaliani

ON THE VOLTERRA-TYPE INTEGRAL OPERATORS IN
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Lucyna Rempulska and Karolina Tomczak

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Nasser Shahzad

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331-337

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B. Bhowmik, S. Ponnusamy and K. -J. Wirths

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Abstract: We consider conformal maps f of the open unit disc onto a concave domain, i.e. a domain whose complement with respect to is convex and unbounded. We say that f is a concave schlicht function if f is a concave domain. We also fix an opening angle for the domain f at ∞ which is less than or equal to πA , $A \in (1, 2]$ and denote this class of functions by $CO(A)$. In this paper we prove a representation formula using Blaschke products for those members f of $CO(A)$ for which the exterior of f is a convex unbounded polygon. Further, we present some examples supporting our conjecture that these polygonal maps are extreme points of the class $CO(A)$.

Xiaofen Lv and Xiaomin Tang

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V. V. Basava Kumar and S. R. Koneru

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Surjit Singh Khurana

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**Belmannu Devadas Acharya, Mukti Acharya and
Deepa Sinha**

CYCLE-COMPATIBLE SIGNED LINE GRAPHS

407-414

Abstract: A *signed graph* is an ordered pair $S = (G, \sigma)$ where $G = (V, E)$ is a graph and σ is a function, called the *signature* of S , that assigns a weight $+1$ or -1 (often called a ‘sign’) to every edge, accordingly designating it as being either *positive* or *negative*. Similarly, a *marked signed graph* is a signed graph each vertex of which is designated to be positive or negative. A marked signed graph S is *cycle-compatible* if for every cycle Z in S the product of the signs of its vertices equals the product of the signs of its edges. Given signed graphs $S = (G, \sigma)$ and $\Gamma = (H, \xi)$ the signed graph Γ is *S-cycle-compatible* if $H \cong L(G)$ and for every cycle Z in Γ ,

$$\prod_{e_1 e_2 \in E(Z)} \xi(e_1 e_2) = \prod_{e \in V(Z)} \sigma(e).$$

In this paper, we give a characterization of a signed graph S whose signed line graph $L(S)$ is *S-cycle-compatible*.

Takanori Ibaraki and Wataru Takahashi

WEAK CONVERGENCE THEOREMS FOR A FINITE FAMILY OF
GENERALIZED NONEXPANSIVE MAPPINGS IN BANACH SPACES
AND APPLICATIONS

415-428

Abstract: In this paper, we introduce an iterative sequence to approximate a common fixed point of a finite family of generalized nonexpansive mappings in a Banach space. Then, we prove a weak convergence theorem for the finite family of generalized nonexpansive mappings. Using this result, we obtain some weak

convergence theorems concerning generalized nonexpansive mappings. In particular, we apply our result to solve the feasibility problem in Banach spaces.

Vladimir Tulovsky

ON EIGENFUNCTIONS AND EIGENVALUES OF THE SCHRÖDINGER
OPERATOR I

429-455

Abstract: The goal of this paper is to present a new method for finding approximation of eigenfunctions and eigenvalues of the one-dimensional Schrödinger operator. The novelty of the method is that it is based on construction of exponentially increasing solutions. This approach has some advantages because exponentially increasing solutions are relatively stable, whereas eigenfunctions are always unstable.