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CONTENTS

Abstract: Using generalized derivative operator we define a new subclass $\mathcal{S}_H(m, n, \alpha, \beta, \gamma, \lambda_1, \lambda_2, t)$ of complex valued harmonic functions which are sense-preserving and univalent in the unit disk. We obtain coefficient bound, extreme points convolution condition and convex combination for the above class harmonic univalent functions.

Abstract: The study of domination in hypergraphs is of fundamental importance, as a straightforward generalization of domination in graphs. Level hypergraphs are the dual concept of hypergraphs without repeated edges, and as such they help to obtain several results in various branches of hypergraph theory. Surprisingly, both topics have not been thoroughly researched until recently. In this paper we use level hypergraphs to get results on domination.

Abstract: We consider iteration of two entire functions of (p, q)-order and compare the growth of maximum modulus and maximum term of iterated entire functions with that of the generating functions.

Abstract: The general concept of the block-transformation graph $G^{\alpha\beta\gamma}$ was introduced in [1]. Now, we study the traversability, planarity and dominations of this class of graphs $G^{\alpha\beta\gamma}$ when $\alpha\beta\gamma = 100$. The vertices and blocks of a graph are its members. The block-transformation graph G^{100} of a graph G is the graph, whose vertex set is the union of vertices and blocks of G, in which two vertices are adjacent whenever the corresponding vertices of G are adjacent or the corresponding blocks of G are nonadjacent or the corresponding members of G are nonincident. In this paper, we mainly obtain the characterizations of graphs whose block-transformation graphs G^{100} are eulerian, hamiltonian and planar. We also determine the domination number of the block-transformation graph G^{100}.

Abstract: Approximate generalized Riemann derivative of order 2 is defined and convexity theorems for this derivative are proved. Also approximate generalized symmetric derivative of order 2 is defined and the convexity condition are obtained.

Abstract: In this paper we introduce a new divisor function $D_{(k)}(n)$ which is the nth coefficient of the Dirichlet series $\left(\zeta^{(k)}(s)\right)^2 = \sum_{n=1}^{\infty} D_{(k)}(n)n^{-s}$ $(\mathrm{Re}\,(s) > 1)$, where $\zeta^{(k)}(s)$ denotes the kth derivative of the Riemann zeta function $\zeta(s) = \sum_{n=1}^{\infty} n^{-s}$ $(\mathrm{Re}\,(s) > 1)$. We will discuss on the mean value of $D_{(k)}(n)$. It is an interesting problem as a new type of the Dirichlet divisor problem. When $k = 1$ we will also show the "truncated Voronoï formula" for an error term of the asymptotic formula for $\sum_{n \le x} D_{(1)}(n)$.

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