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H. W. Gould

Abstract: We prove the following two theorems:

THEOREM 1. *There exist polynomials $f_p(x)$ of degree $p-1$ in x so that*

$$\sum_{n=0}^{\infty} n^p C(n) x^n = (-1)^p \frac{1-\sqrt{1-4x}}{2x} + \frac{f_p(x)}{(1-4x)^{p-1/2}};$$

THEOREM 2. *Let $p \geq 2$ and $n \geq 0$. Then*

$$\sum_{k=0}^{n} k^p C(k) C(n-k) - (-1)^p C(n+1)$$

$$= \frac{(n+1)^p + (-1)^p}{2} C(n+1) + B(n,p) 2^{2n},$$

where $B(n,p)$ is a polynomial of degree $p-2$ in n with positive coefficients when $p \geq 2$, and is zero for $p = 0$ or 1.

Here $C(k) = \binom{2k}{k} \frac{1}{k+1}$ is the k-th Catalan number.

Various specific examples are given together with applications.

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Abstract: Two new related fixed point theorems for two pairs of
set valued mappings on two complete and compact metric spaces
are obtained.

Abstract: Using the idea of an orbit relative to two self-maps, in
this paper, we have obtained some sufficient conditions for a pair of
self-maps to have coincidence points and proved two common fixed
point theorems for a pair of self-maps which commute at their co-
incidence points, called weakly compatible maps. Eventually, our
results extend the result of J. Danes and give an affirmative an-
swer to the open questions posed by Sastry and Murthy.

Abstract: The article treats the problem of some kinds of
generalized semi-symmetric connections on elliptic and hyperbolic
Kaehlerian manifolds. The all geometric differences between these
two kinds of spaces can be seen.

Nayandeep Deka Baruah and Nipen Saikia

Some new explicit values of Ramanujan's continued
fractions   197-222

Abstract: We apply some new and old eta-function identities involving eight arguments to find some new explicit values of Ramanujan's continued fractions and two parameters λ_n and μ_n connected with Ramanujan's cubic theory of elliptic functions.

Sehie Park

Multimaps having openness and the Birkhoff-Kellogg
theorems   223-232

Abstract: Based on a fixed point theorem for the multimap class $\mathcal{B}$, we generalize or correct results on homeomorphically convex sets in [**6**], on openness of multimaps in [**7**], and on the Birkhoff-Kellogg type theorems in [**8**].

P. Vijayaraju and M. Marudai

Some results on common fixed points and best
approximations   233-244

Abstract: In the setting of normed linear spaces results on common fixed points for nonlinear S-nonexpansive demicompact mappings are established one of which is an extension of results of Sahab and Khan and Dotson. As a consequence some applications of best approximations are established.

Hemant Kumar Nashine

BEST APPROXIMATION FOR COMPATIBLE MAPPINGS IN NONCONVEX
SET   245-258

Abstract: Some results on existence of best approximation are proved involving four mappings. A common fixed point theorem involving six mappings is proved in complete metric space which is used to prove yet another fixed point theorem for best approximation as well. The results are proved in consideration with any one map to continuous from all and without starshapedness condition of domain and linearity condition of mapping in setup of normed linear space. Our results generalize the recent results of Imdad [**5**]. Some known results [**1**], [**4**], [**10**], [**11**], [**12**] are also generalized and improved. To achieve our goal. we have introduced a property known as *Property* (Γ).

H. N. Núñez-Yépez, J. L. López-Bonilla and A. L. Salas-Brito

NEW TECHNIQUE FOR EVALUATING LADDER OPERATORS IN THE
COULOMB PROBLEM   259-265

Abstract: We exhibit that to obtain the ladder operators for the non-relativistic quantum Coulomb problem it is enough to solve a rather simple linear system of first-order differential equations. We first assume the most general form for the operators compatible with problem and then, by applying the basic commutation relations they must comply with, we first obtain and then solve a differential equation system; in this way we obtain the usual form of the Coulomb radial ladder operators. The computations are explicitly done only for the creation operator since for the annihilation operator they are almost the same.

Erdal Ekici

Abstract: Two new classes of contra-continuity called contra R-continuity and (δ-semi, s)-continuity are introduced. (δ-semi, s)-continuity is strictly between contra R-continuity and weakly θ-irresoluteness. Moreover, (δ-semi, s)-continuity generalize perfectly continuity, s-continuity, almost s-continuity, regular set-connectedness and contra R-continuity.

B. Janakiram, N. D. Soner and B. Chaluvaraju

Abstract: A set $F \subseteq E$ of a graph $G = (V, E)$ is a maximal edge neighbourhood set if $E - F$ is not a edge neighbourhood set of G. The maximal edge neighbourhood $n'_m(G)$ of G is the minimum cardinality of a maximal edge neighbourhood set of G. In this paper, some properties of this new parameter are developed.

Baljeet Singh

Abstract: The present study is concerned with reflection of coupled waves at a free and fixed plane boundary of a linear isotropic micropolar elastic solid half-space. Reflection coefficients of various reflected waves are computed numerically for a particular model. The variations of these reflection coefficients with the angle of emergence as well as with the frequency of the incident coupled wave are depicted graphically.

M. M. Manene and R. O. Simwa

THE PERFORMANCE OF ONE TYPE STEP-WISE GROUP
SCREENING DESIGNS   303-321

Abstract: In this paper, we evaluate the performance of one type step-wise group screening designs in which group-factors contain equal number of factors in the initial step. We shall examine one type step-wise group screening designs without errors in observations, considering the possibility of cancellation of effects within group-factors. Expressions for the expected total number of runs and the expected number of active factors detected are obtained. The performance of one type step-wise group-screening designs is then compared with the performance of multistage group screening designs. Group screening designs have both biological and industrial applications.

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