Christophe Chesneau and Yogesh J. Bagul
Some new bounds for ratio functions of trigonometric and hyperbolic functions
153-160

Abstract: This paper is devoted to obtain sharp exponential and polynomial upper bounds for the ratio functions \( \frac{\cosh x}{\cos x} \) and \( \frac{\sinh x}{\sin x} \). The proofs are based on the use of a refinement of a special case of the Bernoulli inequality and infinite products.

Masoomeh Yazdani-Moghaddam and Reza Kahkeshani
On the permutation code of the group \( V_{8n} \) and its parameters
161-174

Abstract: In this paper, we consider the permutation code of the group \( V_{8n} \) and study its parameters and the other properties. We obtain its minimum distance, radius, diameter, covering radius, and remoteness. It is shown that the covering radius and the remoteness of \( V_{8n} \) are related to the existence of a transversal in the array whose rows are made up of the codewords of \( V_{8n} \).

Mohammad Asim and Mohammad Imdad
Partial JS-metric spaces and fixed point results
175-186

Abstract: In this paper, we consider the concept of partial JS-metric space as a generalization of partial metric space [7], JS-metric spaces [6], partial \( b \)-metric spaces [8] and similar others wherein we prove some fixed point results under \( \kappa \)-contraction and \( \kappa \)-weak contraction in partial JS-metric spaces. Some examples are also given which exhibit the utility of our results.

Mustafa Bazghandi
Lie symmetries and similarity solutions of phi-four equation
187-197

Abstract: Lie symmetry analysis is performed on the phi-four equation. The Lie point symmetries of the equation are obtained. The optimal system of one-dimensional subalgebras is determined. By using Lie method, classical similarity solutions are obtained. The traveling wave similarity solutions are expressed in form of Jacobi elliptic function.

George A. Anastassiou
Complex multivariate Fink type identity applied to complex multivariate Ostrowski and Grüss inequalities
199-237

Abstract: We present a general complex multivariate Fink type identity which is a
representation formula for a complex multivariate function. Using it we derive general
tight complex multivariate high order Ostrowski and Grüss type inequalities. The esti-
mates involve $L_p$ norms, any $1 \leq p \leq \infty$. We finish with applications.

A. Boua and A. Y. Abdelwanis

Some results about ideals and generalized multiplicative $(\alpha, \beta)$-derivations
on semiprime rings

Abstract: Let $\mathcal{R}$ be a semiprime (or prime) ring, $\alpha, \beta : \mathcal{R} \rightarrow \mathcal{R}$ be automorphisms and $\mathcal{U}$ be a nonzero ideal of $\mathcal{R}$. In this present paper, we study the notions of multiplicative
generalized $(\alpha, \beta)$-derivations on ideals of $\mathcal{R}$ and prove that if $\mathcal{R}$ admits a multiplicative
generalized $(\alpha, \beta)$-derivation $G$ associated with a nonzero additive map $d$ and automor-
phisms $\alpha, \beta$, then $d$ is necessarily a $(\alpha, \beta)$-derivation of $\mathcal{R}$. Also, we study the structure of
a semiprime ring admitting a multiplicative generalized $(\alpha, \beta)$-derivation satisfying more
specific algebraic identities. Moreover, we provide examples to show that the assumed
restrictions cannot be palliated.

Marco Cantarini

Explicit formula for the average of Goldbach numbers

Abstract: Let $\Lambda(n)$ be the Von Mangoldt function, let

$$r_G(n) := \sum_{m_1, m_2 \leq n \atop m_1 + m_2 = n} \Lambda(m_1)\Lambda(m_2),$$

be the counting function of the Goldbach numbers and the counting function of the
prime tuples, respectively. Let $N > 2$ be an integer. We will find the explicit formulæ
for the average of $r_G(n)$ in terms of elementary functions, the incomplete Beta function
$B_z(a, b)$, series over $\rho$ that, with or without subscript, runs over the non-trivial zeros of
the Riemann Zeta function and the Dilogarithm function. We will also prove the explicit
formulæ in an asymptotic form and a truncated formula for the average of $r_G(n)$. Some
observation about these formulæ and the average with Cesàro weight

$$\frac{1}{\Gamma(k+1)} \sum_{n \leq N} r_G(n)(N-n)^k, \ k > 0$$

and

$$r_{PT}(N,h) := \sum_{n=0}^{N} \Lambda(n)\Lambda(n+h), \ h \in \mathbb{N}$$

are included.

Rachida El Khalfaoui and Najib Mahdou

On rings with adequate range one

Abstract: In this paper, we study the class of rings with adequate range one and investi-
gate the transfer of this property to various contexts of constructions such as pullbacks,
trivial ring extensions and amalgamation of rings. Our results provide new classes of
commutative rings satisfying this property.

V. P. Ramesh and R. Thatchaayini

\[
\left\lfloor \frac{\phi(p-1)}{3} \right\rfloor \text{ generators of } (\mathbb{Z}/p\mathbb{Z})^* \text{ are generators of } (\mathbb{Z}/p^\ell\mathbb{Z})^* \text{ for every } \ell \geq 2
\]

Abstract: It is natural to ask, how many generators of the group \((\mathbb{Z}/p\mathbb{Z})^*\) are also generators of \((\mathbb{Z}/p^\ell\mathbb{Z})^*\) for all \(\ell \geq 2\)? In this article, we prove that there are \(\left\lfloor \frac{\phi(p-1)}{3} \right\rfloor\) generators of \((\mathbb{Z}/p\mathbb{Z})^*\) which are also generators of \((\mathbb{Z}/p^\ell\mathbb{Z})^*\), \(\forall \ell \geq 2\).