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CONTENTS

Abstract: The Fourier-Jacobi expansions have been transformed with the help of a matrix $\lambda = (\lambda_{n,k})$ to construct a sequence $\{\sigma_n\}$ of linear operators on certain Banach spaces X. It is proved that σ_n is continuous on X. Again for regular matrices λ, it is proved that σ_n an approximation process on $X, i.e, ||\sigma_n f - f||_x \longrightarrow 0$, as $n \longrightarrow \infty$.

Abstract: In this paper, a new spectral problem and Lax pairs of the mixed nonlinear Schrödinger equation [7,10,11] are obtained. A complex Liouville integrable system associated with the mixed nonlinear Schrödinger equation is given. Furthermore, the solution of the mixed nonlinear Schrödinger equation are transformed into the solutions of Hamiltonian equations.

Abstract: In this article a Farey-Lucas sequence is introduced along the lines of Farey-Fibonacci sequence of Alladi and arithmetical schemes are found for writing out both the increasing Farey- Lucas sequence of a given order as well as the associated sequence of cross differences of consecutive terms.

Abstract: If the images are ideals, the epimorphisms in the category TS of all topological semigroups are morphisms with dense range. If the images are ideals, epireflective subcategories are closed under weak external subobjects.

Abstract: In this paper K-contact and Sasakian manifolds have been studied in

which the divergence of the concircular curvature tensor vanishes.

Abstract: We establish sufficient conditions for a triangular doubly infinite matrix to sum absolutely almost every double orthogonal series satisfying certain requirements. As corollaries of this result we obtain the absolute summability for certain double Nörlund matrices, double Hausdorff matrices and a result of Moricz [2] for double Casàro matrices.

Abstract: We construct an example to show that the hypotheses of a theorem proved by Tikam Singh are not sufficient for the validity of the theorem. We then prove that the theorem does hold good under an additional condition.

Abstract: In this paper two fixed point theorems in compact metric spaces have been established which generalize the results of G. Jungck (1976, 1979, 1988).

Abstract: In this paper we generalize two results, one by Abu-Khuzam and other by Quadri. These are: (1) For all elements x, y, z of division ring R, if there exist positive integers $m = m(x, y), n = n(x, y)$ such that $(a)(xy^m)^n - (y^m x)^n \in Z(R)(b)(xyz)^n - (zyx)^n \in Z(R)$, then R is commutative; (2) Let $n > 1$ be a fixed positive integers and R be a semi prime ring which satisfies any one of the following identities;

$$(i) \quad [(xy)^n - x^n y^n, yx] = 0,$$
$$(ii) \quad [(xy)^n - y^n x^n, yx] = 0$$

for all x, y in R. Then R is commutative.

Abstract: It has been proved that the one point countable compactification of a usc space (i.e, a space in which convergent sequences have unique limits) is maximal countably compact if and only if the space is sequential. From this is deduced that a maximal countably compact space is always sequentially compact. This provides an affirmative answer to a question raised by D. E. Cameron.

G. N. Purohit and R. P. Patidar

Abstract: The flow and heat transfer of a viscous incompressible fluid between two coaxial infinite porous rotating discs has been considered for small cross flow Reynolds number. The discs are rotating with different angular velocities and the rate of injection of the fluid at one disc is different from the rate of suction at the other disc. The governing equation have been solved using regular perturbation technique, taking cross flow Reynolds number as perturbation parameter. Expressions for radial, transverse and axial velocities and temperature have been obtained and these results have beeen numerically worked out for different values of parameters involved in the solution. The Nusselt number and the skin-friction coefficient for various cases have also been calculated at both the discs and the results are expressed in a tabular form.

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