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DOMINATING FUNCTION THEORY WITH REFERENCE TO POWER SERIES

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Abstract

In the present paper some properties like continuity, periodicity, domain, etc of some indefinite non-integrable functions previously studied by Yadav and Sen [3,6] have been discussed keeping in view of the expansion of a function in power series by Maclaurin's and Taylor's theorems, the existence theorem of indefinite integrability (Yadav et al [1]), term-by-term integration of a power series [14,15] and of a Fourier series [13]. Yadav et al [3,6] gave many functions (six standard form of functions), which are either continuous or piecewise continuous in their domain but they are not indefinite integrable. To make them indefinite integrable, the idea of the Dominating function theory and the existence theorem for indefinite integrability of a continuous or piece-wise continuous function have already been propounded by Yadav and Sen [1,2]. In the present paper the validity of D-function theory and its related properties have been proved.

Key Words : *Sufficient condition for integrability, Indefinite non-integrable functions by Yadav et al [3,6], D-function, Indefinite integrability of power series and Fourier series, etc.*

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