

A note on certain classes of transformation formulas involving several variables

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Abstract

This paper gives certain new classes of transformation formulas in the form of multiple-series identities involving several variables. The results obtained, besides being capable of unifying and providing extensions to various transformation and reduction formulas, also yield other new formulas. The applicability of the main results is treated briefly in the concluding section.

1 Introduction

Transformation and reduction (or summation) formulas relating to special functions of one or several variables are of utmost importance. These are invariably used in different applied branches of theoretical physics and engineering sciences. See, for example [1], [3], [7], [8], and [9].

While working on an alternative proof of a recently posed problem concerning a certain hypergeometric identity, Grosjean and Srivastava [2] were lead to its multiple-series generalization and to its other related extensions. Several transformation and reduction formulas of hypergeometric functions have been deduced in [2] from the main multiple-series identities. Multiple-series identities have also recently been obtained in [5], [8], and were also recorded in [9]. Our motive in this paper is to obtain new classes of transformation formulas in the form of certain general

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