Applications of the Operator T in q-Polynomials

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ABSTRACT

In this paper, we define the polynomials $V_n(a,b,c,f,x,y)$. In order to determine the generating function, Rogers' formula, Mehler's formula, and their extensions for polynomials $V_n(a,b,c,f,x,y)$, we utilize the q-exponential operator T. Some results for the Cauchy polynomials $P_n(x,y)$ and the bivariate Rogers-Szegö polynomials $h_n(x,y|q)$ are obtained by inserting special values into the identities of the polynomials $V_n(a,b,c,f,x,y)$.

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