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ON THE NUMBER OF PARTITIONS INTO PARTS WITH THE MINIMAL PART k AND THE MINIMAL DIFFERENCE d^*

Mircea Merca[†]

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Dedicated to Dr. Vasile Drăgan on the occasion of his 70^{th} anniversary

Abstract

In this paper, the author considered two specializations of the identity q-Chu Vandermonde and derived two recurrence relations for the number of partitions of n into m parts with the smallest part greater than or equal to k and the minimal difference d.
MSC: 05E05, 11P84, 05A19

Keywords: q-series, Rogers-Ramanujan functions, integer partitions

1 Introduction

For $|q| < 1$, the Rogers-Ramanujan functions are defined by

$$G(q) = \sum_{n=0}^{\infty} \frac{q^{n^2}}{(q;q)_n} \tag{1}$$

and

$$H(q) = \sum_{n=0}^{\infty} \frac{q^{n^2+n}}{(q;q)_n}, \tag{2}$$

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[†]mircea.merca@profinfo.edu.ro Academy of Romanian Scientists, Ilfov 3, Sector 5, Bucharest