AN EXPONENTIAL IDENTITY IN TERMS OF PARTIAL DERIVATIVES

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Abstract. Your abstract here.

Contents

1. Introduction

This manuscript provides an exponential identity in terms of partial derivatives, extending the main idea explained in [Kol22] that gives polynomial identity in a form as follows

$$n^{2m+1} = \sum_{k=1}^{n} \sum_{r=0}^{m} \mathbf{A}_{m,r} k^r (n-k)^r, \quad (m,n) \in \mathbb{N}, \tag{1}$$

where $\mathbf{A}_{m,r}$ are real coefficients defined recursively, see [Kol16]. Define the function f such that based on the identity (1) with the only difference that values of n, m in its left part appear to be parameters of the function f, that is

Definition 1.1.

$$f(x,y,z) = \sum_{k=1}^{z} \sum_{r=0}^{y} \mathbf{A}_{y,r} k^r (x-k)^r \tag{2}$$

2. Conclusions

Conclusions of your manuscript.

References

[Kol16] Petro Kolosov. On the link between Binomial Theorem and Discrete Convolution of Polynomials. *arXiv preprint arXiv:1603.02468*, 2016. https://arxiv.org/abs/1603.02468.

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[Kol22] Petro Kolosov. 106.37 An unusual identity for odd-powers. *The Mathematical Gazette*, 106(567):509–513, 2022. https://doi.org/10.1017/mag.2022.129.

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