AN EXPONENTIAL IDENTITY IN TERMS OF PARTIAL DERIVATIVES

PETRO KOLOSOV

ABSTRACT. Your abstract here.

CONTENTS

1. Introduction 1
2. Conclusions 1
References 2

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.

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

Important to note that upper bound of the sum $\sum_{k=1}^{z}$ is parameter of the function f in contrast to the equation (1) where upper bound of the sum is n.

2. CONCLUSIONS

Conclusions of your manuscript.

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Email address: kolosovp94@gmail.com

URL: https://razumovsky.me/