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COMMENT

Comment on 'A summation formula for Clausen's series ${}_3F_2(1)$ with an application to Goursat's function ${}_2F_2(x)$'

Yong Sup Kim[1] **and Arjun K Rathie**[2]

[1] Department of Mathematics Education, Wonkwang University, Iksan 570-749, Korea
[2] Department of Mathematics, Govt Sujangarh College, Churu, Rajasthan, India

E-mail: yspkim@wonkwang.ac.kr and akrathie@rediffmail.com

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Abstract
In a recent paper, Miller (2005 *J. Phys. A: Math. Gen.* **38** 3541–5) obtained a new summation formula for the Clausen's series ${}_3F_2(1)$. The aim of this comment is to point out that the summation formula obtained by Miller is not a new one.

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Very recently, a new summation formula for the Clausen's series ${}_3F_2(1)$ was reported to have been obtained in [2]. The author showed that for $\Re(b-a-f) > 1$,

$$ {}_3F_2\left[\begin{matrix} f, & a, & c+1 \\ & b, & c \end{matrix} ;1\right] = \frac{(c-a)(\alpha-f)}{c} \cdot \frac{\Gamma(b)\Gamma(b-a-f-1)}{\Gamma(b-a)\Gamma(b-f)}, \tag{1} $$

where α is given by

$$ \alpha = \frac{c(1+a-b)}{a-c} \tag{2} $$

and in particular, for $f = -n$, the result

$$ {}_3F_2\left[\begin{matrix} -n, & a, & c+1 \\ & b, & c \end{matrix} ;1\right] = \frac{(b-a-1)_n(f+1)_n}{(b)_n(f)_n} \tag{3} $$

and claims that these results are new.

On going through the literature, we noted that the summation formula (1) obtained by Miller is not a new one. For this, if we consult the book by Prudnikov *et al* [4, equation (10), p 534], we get this result written in a slightly different form. Moreover, the result is a very special case of a formula due to Minton [3] which is also stated as (1.9.1) in the book by Gasper and Rahman [1]. We remark in passing that formula (2) can also be established with the help of the integral representation for ${}_3F_2$ and the well-known Euler's transformation formula for ${}_2F_1$.

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