Jñānābha ज्ञानाभ

VOLUME 31/32

Special Volume to Honour

Professor H.M. Srivastava

on his 62nd Birthday

2002

Published by :

The Vijñāna Parishad of India

DAYANAND VEDIC POSTGRADUATE COLLEGE

(Bundelkhand University)

ORAI, U.P. INDIA.

36

Jñānābha, Vol. 31/32, 2002

(Dedicated to Professor H. M. Srivastava on his 62nd Birthday)

REMARKS ON "CERTAIN INTEGRALS INVOLVING HYPERGEOMETRIC FUNCTIONS OF THREE AND FOUR VARIABLES" BY SUNIL JOSHI AND S.S. BHATI (Jñānābha, 27 (1997), 93-98)

By

R.C. Singh Chandel and S.S. Chauhan

Department of Mathematics, D.V. Postgraduate College, Orai-285001, U.P., India

(Received : April 4, 2001)

The result	can be obtained by the operator	in place of operator
(1) [1, p.94 (I)]	$exp\ (uE_\alpha + vE_\beta + wE_\gamma)$	$exp\ (uE_\alpha E_{\alpha'} + vE_\beta E_{\beta'} + wE_\gamma E_{\gamma'})$
(2) [1, p.94 (II)]	$exp\ (uE_\gamma E_{\gamma'} + vE_\alpha E_{\alpha'} + wE_\beta)$	$exp\ (uE_\gamma E_{\gamma'} + vE_\alpha E_{\alpha'} + wE_\beta E_{\beta'})$
(3) [1, p.94 (III)]	$exp\ [(uE_\gamma E_{\gamma'} + vE_\alpha + wE_\beta)E_{\alpha'}]$	$exp\ [(uE_\gamma E_{\gamma'} + vE_\alpha + wE_\beta E_{\beta'})E_{\alpha'}]$
(4) [1, p.94 (IV)]	$exp\ (uE_\gamma E_{\gamma'} + vE_\alpha + wE_\beta + tE_\delta E_{\delta'})$	$exp\ (uE_\gamma E_{\gamma'} + vE_\alpha E_{\alpha'} + wE_\beta E_{\beta'} + tE_\delta E_{\delta'})$
(5) [1, p.94 (V)]	$exp\ (uE_\gamma E_{\gamma'} + vE_\delta E_{\delta'} + wE_\alpha + tE_\beta)$	$exp\ (uE_\gamma E_{\gamma'} + vE_\delta E_{\delta'} + wE_\alpha E_{\alpha'} + tE_\beta E_{\beta'})$
(6) [1, p.94 (VI)]	$exp\ (uE_\gamma E_{\gamma'} + vE_\alpha E_{\alpha'} + wE_\delta E_{\delta'} + tE_\beta E_{\beta'})$	$exp(uE_\gamma E_{\gamma'} + vE_\alpha E_{\alpha'} + wE_\delta E_{\delta'} + E_\beta E_{\beta'})$

The result [1,p.94 (II)] for w= 0, reduces to

$$(7) \qquad \int_{-\infty}^{\infty} \frac{sin(2n+1)\pi x}{sin\ \pi x \Gamma(\alpha+x)\Gamma(\beta-x)}\, {}_2F_1[\alpha+\beta, \alpha', \alpha+x; v]dx$$

$$= \frac{2^{\alpha+\beta-2}}{\Gamma(\alpha+\beta-1)}\, {}_2F_1[\alpha+\beta, \alpha'; \alpha+\beta-1; 2v], Re(\alpha+\beta) > 1$$

in place of [1,p.97 (3.2)].

In right hand side of [(1, p.97, (3.3)], in place of F_2 there should be F_1. Thus the particular cases [1,p.97, (3.1), (3.3), (3.4)] of [1, p.94, (I), (II), (III)] for $u=0$, are all same.

REFERENCE

[1] S. Joshi and S.S. Bhati, Certain integrals involving hypergeometric functions of three and four variables, *Jñānābha* **27** (1997), 93-98.

37