

ON CERTAIN INTEGRALS INVOLVING PRODUCT OF HYPERGEOMETRIC FUNCTION AND H-FUNCTION

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Abstract: In this paper we have evaluated an integral involving the product of Gaussian's hypergeometric function and H-function of two variables.

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1. Introduction

The main aim of this paper is to evaluate an integral involving the product of Gaussian's hypergeometric series and H-function of two variables. Interesting special cases of this integral have also been discussed.

The result established here are of a very general nature and include several known results in the literature.

2. Notations and Definitions

The H-function of two variables is defined as [2].

$$H_{p,[t,t'],s[q;q']}^{n,v_1,v_2,m_1,m_2} \left[\begin{array}{c} x \\ y \end{array} \middle| \begin{array}{l} \{(\varepsilon_p); (e_p)\} \\ \{(\gamma_t); c_t\}; \{(\gamma'_t); c'_t\} \\ \{(\delta_s); d_s\} \\ \{(\beta_q); b_q\}; \{(\beta'_{q'}); b'_{q'}\} \end{array} \right] \\ = \frac{-1}{4\pi^2} \int_{-i\infty}^{+i\infty} \int_{-i\infty}^{+i\infty} \Phi(\xi + \eta) \Psi(\xi, \eta) x^\xi . y^\eta . d\xi . d\eta. \quad (2.1)$$