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Evaluation of A Summation Formula Based on Half Argument and Allied with Recurrence Relation

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I. Introduction

Special functions and their applications are now awe-inspiring in their scope, variety and depth. Not only in their rapid growth in pure Mathematics and its applications to the traditional fields of Physics, Engineering and Statistics but in new fields of applications like Behavioral Science, Optimization, Biology, Environmental Science and Economics, etc. they are emerging. The term hypergeometric series was first used by John Wallis in his 1655 book Arithmetica Infinitorum. Hypergeometric series were studied by Euler, but the first full systematic treatment was given by Gauss (1813), Studies in the nineteenth century included those of Ernst Kummer (1836), and the fundamental characterisation by Bernhard Riemann of the hypergeometric function by means of the differential equation it satisfies. Multiple hypergeometric functions constitute a natural generalization of the Gauss hypergeometric functions of one variable. Since the introduction of double hypergeometric function by Appell and hypergeometric series by Lauricella, numerous papers by many workers have been published and the theory has been considerably extended. An extensive study has been made in Europe, America and India for these multiple functions, which produced explosion of knowledge of the subject.

The **Pochhammer symbol** or **generalized factorial function** or **shifted factorial** or **falling factorial** is defined by

$$(a)_n = \frac{\Gamma(a+n)}{\Gamma(a)} = \begin{cases} a(a+1)(a+2)\cdots(a+n-1) \ ; & \text{if } n = 1,2,3,\ldots \\ 1 \ ; & \text{if } n = 0 \\ n! \ ; & \text{if } a = 1,\ n = 1,2,3,\ldots \end{cases} \quad (1)$$

where $a \neq 0, -1, -2, \ldots$ and the notation Γ stands for Gamma function. Note that $(0)_0 = 1$.

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If $m = 1, 2, 3, 4, \ldots$ and $n = 0, 1, 2, 3, 4, \ldots$ then

$$(b)_{mn} = m^{mn}\left(\frac{b}{m}\right)_n\left(\frac{b+1}{m}\right)_n \cdots \left(\frac{b+m-2}{m}\right)_n\left(\frac{b+m-1}{m}\right)_n \tag{2}$$

$$(\alpha)_{p+q} = (\alpha)_p(\alpha+p)_q = (\alpha)_q(\alpha+q)_p \tag{3}$$

$$\text{If } 0 \le k \le \left[\frac{n}{m}\right], \text{ then } (b)_{n-mk} = \frac{(\frac{-1}{m})^{mk}(b)_n}{\prod_{j=1}^{m}(\frac{j-b-n}{m})_k} \tag{4}$$

$$(n-mk)! = \frac{(\frac{-1}{m})^{mk}\, n!}{\prod_{j=1}^{m-1}(\frac{j-n}{m})_k} \tag{5}$$

where $[x]$ returns the largest integer less than or equal to x. In Slater's book, $(a)_n$ is denoted by (a, n).

$$(b)_{-m} = \frac{\Gamma(b-m)}{\Gamma(b)} = \frac{(-1)^m}{(1-b)_m} \tag{6}$$

where, $b \neq 0, \pm1, \pm2, \pm3, \pm4, \ldots$ and $m = 1, 2, 3, 4, \ldots$

Generalized Gaussian Hypergeometric function of one variable is defined by

$${}_AF_B\left[\begin{array}{ccc} a_1, a_2, \cdots, a_A & ; & \\ & & z \\ b_1, b_2, \cdots, b_B & ; & \end{array}\right] = \sum_{k=0}^{\infty}\frac{(a_1)_k(a_2)_k\cdots(a_A)_k z^k}{(b_1)_k(b_2)_k\cdots(b_B)_k k!}$$

or

$${}_AF_B\left[\begin{array}{ccc} (a_A) & ; & \\ & & z \\ (b_B) & ; & \end{array}\right] \equiv {}_AF_B\left[\begin{array}{ccc} (a_j)_{j=1}^{A} & ; & \\ & & z \\ (b_j)_{j=1}^{B} & ; & \end{array}\right] = \sum_{k=0}^{\infty}\frac{((a_A))_k z^k}{((b_B))_k k!} \tag{7}$$

where the parameters $b_1, b_2, \cdots, b_B$ are neither zero nor negative integers and A, B are non-negative integers and $\mid z \mid = 1$.

Contiguous Relation is defined by

[Andrews p.363(9.16), E. D. p.51(10)]

$$(a-b)\ {}_2F_1\left[\begin{array}{ccc} a,\ b & ; & \\ & & z \\ c & ; & \end{array}\right] = a\ {}_2F_1\left[\begin{array}{ccc} a+1,\ b & ; & \\ & & z \\ c & ; & \end{array}\right] - b\ {}_2F_1\left[\begin{array}{ccc} a,\ b+1 & ; & \\ & & z \\ c & ; & \end{array}\right] \tag{8}$$

Gauss second summation theorem is defined by [Prud., 491(7.3.7.8)]

$${}_2F_1\left[\begin{array}{ccc} a,\ b & ; & \\ & & \frac{1}{2} \\ \frac{a+b+1}{2} & ; & \end{array}\right] = \frac{\Gamma(\frac{a+b+1}{2})\ \Gamma(\frac{1}{2})}{\Gamma(\frac{a+1}{2})\ \Gamma(\frac{b+1}{2})} \tag{9}$$

$$= \frac{2^{(b-1)}\ \Gamma(\frac{b}{2})\ \Gamma(\frac{a+b+1}{2})}{\Gamma(b)\ \Gamma(\frac{a+1}{2})} \tag{10}$$

In a monograph of Prudnikov et al., a summation theorem is given in the form [Prud., p.491(7.3.7.8)]

$$ {}_2F_1\left[\begin{matrix} a,\ b \\ \frac{a+b-1}{2} \end{matrix};\ \frac{1}{2}\right] = \sqrt{\pi}\left[\frac{\Gamma(\frac{a+b+1}{2})}{\Gamma(\frac{a+1}{2})\,\Gamma(\frac{b+1}{2})} + \frac{2\,\Gamma(\frac{a+b-1}{2})}{\Gamma(a)\,\Gamma(b)}\right] \tag{11} $$

Now using Legendre's duplication formula and Recurrence relation for Gamma function, the above theorem can be written in the form

$$ {}_2F_1\left[\begin{matrix} a,\ b \\ \frac{a+b-1}{2} \end{matrix};\ \frac{1}{2}\right] = \frac{2^{(b-1)}\,\Gamma(\frac{a+b-1}{2})}{\Gamma(b)}\left[\frac{\Gamma(\frac{b}{2})}{\Gamma(\frac{a-1}{2})} + \frac{2^{(a-b+1)}\,\Gamma(\frac{a}{2})\,\Gamma(\frac{a+1}{2})}{\{\Gamma(a)\}^2} + \frac{\Gamma(\frac{b+2}{2})}{\Gamma(\frac{a+1}{2})}\right] \tag{12} $$

Recurrence relation is defined by

$$ \Gamma(z+1) = z\,\Gamma(z) \tag{13} $$

II. Main Result

$$ {}_2F_1\left[\begin{matrix} a,\ b \\ \frac{a+b+35}{2} \end{matrix};\ \frac{1}{2}\right] = \frac{2^b\,\Gamma(\frac{a+b+35}{2})}{(a-b)\,\Gamma(b)}\times $$

$$ \times\left[\frac{\Gamma(\frac{b}{2})}{\Gamma(\frac{a+1}{2})}\left\{\frac{65536a(191898783962510625 - 45444140136823680 0a + 421214220916438680a^2)}{\left[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\right]\left[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\right]} + \right. \right. $$

$$ + \frac{65536a(-215245451727154944a^3 + 69953125893139644a^4 - 15611917903312640a^5)}{\left[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\right]\left[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\right]} + $$

$$ + \frac{65536a(2505185827387880a^6 - 297403077939968a^7 + 26569595376038a^8 - 1801370405120a^9)}{\left[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\right]\left[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\right]} + $$

$$ + \frac{65536a(92751487400a^{10} - 3600792832a^{11} + 103613692a^{12} - 2141440a^{13} + 30040a^{14} - 256a^{15} + a^{16})}{\left[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\right]\left[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\right]} + $$

$$ + \frac{65536a(-1589985053779752 00b + 160158645208764792 0ab - 624388051013229216a^2b)}{\left[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\right]\left[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\right]} + $$

$$ + \frac{65536a(672430138856900592a^3b - 118482004312390688a^4b + 45551364598847984a^5b)}{\left[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\right]\left[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\right]} + $$

$$ + \frac{65536a(-4435348958817568a^6b + 824274801730864a^7b - 47099407828704a^8b + 4760242317072a^9b)}{\left[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\right]\left[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\right]} + $$

$$ \left. \left. + \frac{65536a(-158593548256a^{10}b + 9023659216a^{11}b - 161683808a^{12}b + 4998224a^{13}b - 36960a^{14}b)}{\left[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\right]\left[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\right]} + \right. \right. $$

$$+\frac{65536a(528a^{15}b+940304347040302200b^2-167129866463313600ab^2+1565019021296531592a^2b^2)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536a(-206106535912708992a^3b^2+22527125569064767 2a^4b^2-18239227247368512a^5b^2)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536a(7239298092789576a^6b^2-361604047216896a^7b^2+69113934169896a^8b^2-2073715803456a^9b^2)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536a(213043702872a^{10}b^2-3508382592a^{11}b^2+199059432a^{12}b^2-1374912a^{13}b^2+40920a^{14}b^2)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536a(1348118704909310 40b^3+1145685449186532144ab^3-42072854780375232a^2b^3)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536a(427559184167559840a^3b^3-24609722912109280a^4b^3+26141054527921168a^5b^3)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536a(-1085549498794112a^6b^3+422199872988608a^7b^3-11232092335200a^8b^3)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536a(2100369962064a^9b^3-31783404224a^{10}b^3+3163530656a^{11}b^3-20569120a^{12}b^3+1107568a^{13}b^3)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536a(227974014975506844b^4+7438993408267660 8ab^4+340559682051260760a^2b^4)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536a(-3735455421134976a^3b^4+44357797204833156a^4b^4-1251405780261120a^5b^4)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536a(1266971455650384a^6b^4-27724725718272a^7b^4+10295243007588a^8b^4-138281447040a^9b^4)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536a(24624322008a^{10}b^4-148097664a^{11}b^4+13884156a^{12}b^4+2346315607120073 6b^5)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536a(109033109373003376ab^5+11644472098601760a^2b^5+36927624682661328a^3b^5)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536a(-133812647496000a^4b^5+2004216495193440a^5b^5-28680451208640a^6b^5)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536a(27382474864800a^7b^5-298829757600a^8b^5+104344772400a^9b^5-555366240a^{10}b^5)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536a(92561040a^11b^5+108690721878121 68b^6+5985820063371456ab^6+14802425524183176a^2b^6)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536a(708321165615360a^3b^6+1713851879026320a^4b^6-1935009901440a^5b^6+41314983328080a^6b^6)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536a(-285600648960a^7b^6+255386589480a^8b^6-1091745600a^9b^6+354817320a^{10}b^6)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536a(7172607779944 64b^7+2594162140235248ab^7+458691506376576a^2b^7+784325815238592a^3b^7)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536a(18518957835840a^4b^7+35960462445600a^5b^7-9170663040a^6b^7+372721947840a^7b^7)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536a(-982571040a^8b^7+818809200a^9b^7+1490646552407 10b^8+97562518884864ab^8)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536a(182692939157256a^2b^8+13725326951424a^3b^8+17944376279940a^4b^8+204374776320a^5b^8)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536a(328424370120a^6b^8+1166803110a^8b^8+62010293660 48b^9+19239357998608ab^9)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536a(3911767205280a^2b^9+4975885470864a^3b^9+165209589600a^4b^9+173969661360a^5b^9)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536a(764221920a^6b^9+1037158320a^7b^9+67426804922 4b^{10}+456852420288ab^{10})}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536a(717189756888a^2b^{10}+56410020480a^3b^{10}+54189742200a^4b^{10}+655047360a^5b^{10})}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536a(573166440a^6b^{10}+16994547232b^{11}+46979218832ab^{11}+9049664832a^2b^{11}+9488348064a^3b^{11})}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536a(252439200a^4b^{11}+193536720a^5b^{11}+10101113888b^{12}+628138368ab^{12}+860817672a^2b^{12})}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536a(49365888a^3b^{12}+38567100a^4b^{12}+13933216b^{13}+34705616ab^{13}+4746720a^2b^{13})}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536a(4272048a^3b^{13}+434808b^{14}+196416ab^{14}+237336a^2b^{14}+2464b^{15}+5456ab^{15}+33b^{16})}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536b(191898783962510625-158998505377975200a+940304347040302200a^2)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536b(134811870490931040a^3+22797401497550684a^4+2346315607120736a^5)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536b(10869072187812168a^6+717260777994464a^7+149064655240710a^8+6201029366048a^9)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536b(674268049224a^{10}+16994547232a^{11}+1010111388a^{12}+13933216a^{13}+434808a^{14}+2464a^{15})}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536b(33a^{16}-454414013682368000b+1601586452087647920ab-167129866463313600a^2b)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536b(1145685449186532144a^3b+7438993408267608a^4b+1090331093730033 76a^5b)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536b(5985820063371456a^6b+2594162140235248a^7b+97562518884864a^8b+19239357998608a^9b)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536b(456852420288a^{10}b+46979218832a^{11}b+628138368a^{12}b+34705616a^{13}b+196416a^{14}b)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536b(5456a^{15}b+42121422091643868 0b^2-624388051013229216ab^2+1565019021296531592a^2b^2)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536b(-42072854780375232a^3b^2+340559682051260760a^4b^2+11644472098601760a^5b^2)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536b(14802425524183176a^6b^2+458691506376576a^7b^2+182692939157256a^8b^2)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536b(3911767205280a^9b^2+717189756888a^{10}b^2+9049664832a^{11}b^2+860817672a^{12}b^2)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536b(4746720a^{13}b^2+237336a^{14}b^2-215245451727154944b^3+67243013885690059 2ab^3)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536b(-206106535912708992a^2b^3+42755918416755984 0a^3b^3-3735455421134976a^4b^3)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536b(369276246826613 28a^5b^3+708321165615360a^6b^3+784325815238592a^7b^3)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536b(13725326951424a^8b^3+4975885470864a^9b^3+56410020480a^{10}b^3+9488348064a^{11}b^3)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536b(49365888a^{12}b^3+4272048a^{13}b^3+69953125893139644b^4-118482004312390688ab^4)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536b(22527125569064767 2a^2b^4-24609722912109280a^3b^4+44357797204833156a^4b^4)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536b(-133812647496000a^5b^4+1713851879026320a^6b^4+18518957835840a^7b^4)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536b(17944376279940a^8b^4+165209589600a^9b^4+54189742200a^{10}b^4+252439200a^{11}b^4)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536b(38567100a^12b^4-156119179033126 40b^5+45551364598847984ab^5-18239227247368512a^2b^5)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536b(26141054527921168a^3b^5-1251405780261120a^4b^5+2004216495193440a^5b^5)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536b(-1935009901440a^6b^5+35960462445600a^7b^5+204374776320a^8b^5+173969661360a^9b^5)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536b(655047360a^{10}b^5+193536720a^{11}b^5+2505185827387880b^6-4435348958817568ab^6)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536b(7239298092789576a^2b^6-1085549498794112a^3b^6+1266971455650384a^4b^6)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536b(-28680451208640a^5b^6+41314983328080a^6b^6-9170663040a^7b^6+328424370120a^8b^6)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536b(764221920a^9b^6+573166440a^10b^6-297403077939968b^7+824274801730864ab^7)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536b(-361604047216896a^2b^7+422199872988608a^3b^7-27724725718272a^4b^7)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536b(27382474864800a^5b^7-285600648960a^6b^7+372721947840a^7b^7+1037158320a^9b^7)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536b(265695953760380b^8-47099407828704ab^8+69113934169896a^2b^8-11232092335200a^3b^8)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536b(10295243007588a^4b^8-298829757600a^5b^8+255386589480a^6b^8-982571040a^7b^8)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536b(1166803110a^8b^8-1801370405120b^9+4760242317072ab^9-2073715803456a^2b^9)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536b(2100369962064a^3b^9-138281447040a^4b^9+104344772400a^5b^9-1091745600a^6b^9)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536b(818809200a^7b^9+92751487400b^{10}-158593548256ab^{10}+213043702872a^2b^{10})}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536b(-31783404224a^3b^{10}+24624322008a^4b^{10}-555366240a^5b^{10}+354817320a^6b^{10})}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536b(-36007928 32b^{11}+9023659216ab^{11}-3508382592a^2b^{11}+3163530656a^3b^{11}-148097664a^4b^{11})}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536b(92561040a^5b^{11}+103613692b^{12}-161683808ab^{12}+199059432a^2b^{12}-20569120a^3b^{12})}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536b(13884156a^4b^{12}-2141440b^{13}+4998224ab^{13}-1374912a^2b^{13}+1107568a^3b^{13}+30040b^{14})}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536b(-36960ab^{14}+40920a^2b^{14}-256b^{15}+528ab^{15}+b^{16})}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}\Bigg\}-$$

$$-\frac{\Gamma(\frac{b+1}{2})}{\Gamma(\frac{a}{2})}\Bigg\{\frac{131072(191898783962510625+15899850537797520 0a+9403043470403022 00a^2)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{131072(-134811870490931040a^3+22797401497550684 4a^4-2346315607120073 6a^5)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{131072(10869072187812168a^6-717260777994464a^7+149064655240710a^8-6201029366048a^9)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{131072(674268049224a^{10}-16994547232a^{11}+1010111388a^{12}-13933216a^{13}+434808a^{14}-2464a^{15})}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{131072(33a^{16}+454441401368236800b+1601586452087647920ab+167129866463313600a^2b)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{131072(1145685449186532144a^3b-7438993408267660 8a^4b+1090331093730033 76a^5b)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{131072(-5985820063371456a^6b+2594162140235248a^7b-97562518884864a^8b+19239357998608a^9b)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{131072(-4568524202 88a^{10}b+469792188 32a^{11}b-628138368a^{12}b+34705616a^{13}b-196416a^{14}b)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{131072(5456a^{15}b+42121422091643868 0b^2+6243880510132292 16ab^2+1565019021296531592a^2b^2)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{131072(42072854780375232a^3b^2+340559682051260760a^4b^2-11644472098601760a^5b^2)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{131072(14802425524183176a^6b^2-458691506376576a^7b^2+182692939157256a^8b^2)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{131072(-3911767205280a^9b^2+717189756888a^{10}b^2-9049664832a^{11}b^2+860817672a^{12}b^2)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{131072(-4746720a^{13}b^2+237336a^{14}b^2+215245451727154944b^3+67243013885690059 2ab^3)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{131072(206106535912708992a^2b^3+42755918416755984 0a^3b^3+3735455421134976a^4b^3)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{131072(36927624682661328a^5b^3-708321165615360a^6b^3+784325815238592a^7b^3)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{131072(-13725326951424a^8b^3+4975885470864a^9b^3-56410020480a^{10}b^3+9488348064a^{11}b^3)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{131072(-49365888a^{12}b^3+4272048a^{13}b^3+69953125893139644b^4+1184820043123906 88ab^4)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{131072(22527125569064767 2a^2b^4+24609722912109280a^3b^4+44357797204833156a^4b^4)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{131072(133812647496000a^5b^4+1713851879026320a^6b^4-18518957835840a^7b^4+17944376279940a^8b^4)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{131072(-165209589600a^9b^4+54189742200a^{10}b^4-252439200a^{11}b^4+38567100a^{12}b^4)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{131072(15611917903312640b^5+45551364598847984ab^5+18239227247368512a^2b^5)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{131072(26141054527921168a^3b^5+1251405780261120a^4b^5+2004216495193440a^5b^5)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{131072(1935009901440a^6b^5+35960462445600a^7b^5-204374776320a^8b^5+173969661360a^9b^5)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{131072(-655047360a^{10}b^5+193536720a^{11}b^5+2505185827387880b^6+4435348958817568ab^6)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{131072(7239298092789576a^2b^6+1085549498794112a^3b^6+1266971455650384a^4b^6)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{131072(28680451208640a^5b^6+41314983328080a^6b^6+9170663040a^7b^6+328424370120a^8b^6)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{131072(-764221920a^9b^6+573166440a^10b^6+297403077939968b^7+824274801730864ab^7)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{131072(361604047216896a^2b^7+422199872988608a^3b^7+27724725718272a^4b^7+27382474864800a^5b^7)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{131072(285600648960a^6b^7+372721947840a^7b^7+1037158320a^9b^7+265695953760380b^8)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{131072(47099407828704ab^8+69113934169896a^2b^8+11232092335200a^3b^8+10295243007588a^4b^8)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{131072(298829757600a^5b^8+255386589480a^6b^8+982571040a^7b^8+1166803110a^8b^8)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{131072(1801370405120b^9+4760242317072ab^9+2073715803456a^2b^9+2100369962064a^3b^9)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{131072(138281447040a^4b^9+104344772400a^5b^9+1091745600a^6b^9+818809200a^7b^9+92751487400b^{10})}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{131072(158593548256ab^{10}+213043702872a^2b^{10}+31783404224a^3b^{10}+24624322008a^4b^{10})}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{131072(555366240a^5b^{10}+354817320a^6b^{10}+3600792832b^{11}+9023659216ab^{11}+3508382592a^2b^{11})}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{131072(3163530656a^3b^{11}+148097664a^4b^{11}+92561040a^5b^{11}+103613692b^{12}+161683808ab^{12})}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{131072(199059432a^2b^{12}+20569120a^3b^{12}+13884156a^4b^{12}+2141440b^{13}+4998224ab^{13})}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{131072(1374912a^2b^{13}+1107568a^3b^{13}+30040b^{14}+36960ab^{14}+40920a^2b^{14}+256b^{15}+528ab^{15}+b^{16})}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{131072(191898783962510625+454414401368236800a+421214220916438680a^2)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{131072(215245451727154944a^3+69953125893139644a^4+15611917903312640a^5)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{131072(2505185827387880a^6+297403077939968a^7+26569595376038a^8+1801370405120a^9)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{131072(92751487400a^{10}+3600792832a^{11}+103613692a^{12}+2141440a^{13}+30040a^{14}+256a^{15}+a^{16})}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{131072(158998505377975200b+16015864520876479 20ab+624388051013229216a^2b)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{131072(672430138856900592a^3b+118482004312390688a^4b+45551364598847984a^5b)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{131072(4435348958817568a^6b+824274801730864a^7b+47099407828704a^8b+4760242317072a^9b)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{131072(158593548256a^{10}b+9023659216a^{11}b+161683808a^{12}b+4998224a^{13}b+36960a^{14}b+528a^{15}b)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{131072(940304347040302200b^2+167129866463313600ab^2+156501902129653 1592a^2b^2)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{131072(206106535912708992a^3b^2+22527125569064 7672a^4b^2+18239227247368512a^5b^2)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{131072(7239298092789576a^6b^2+361604047216896a^7b^2+69113934169896a^8b^2+2073715803456a^9b^2)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{131072(213043702872a^{10}b^2+3508382592a^{11}b^2+199059432a^{12}b^2+1374912a^{13}b^2+40920a^{14}b^2)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{131072(-134811870490931040b^3+11456854491865321 44ab^3+42072854780375232a^2b^3)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{131072(427559184167559840a^3b^3+24609722912109280a^4b^3+26141054527921168a^5b^3)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{131072(1085549498794112a^6b^3+422199872988608a^7b^3+11232092335200a^8b^3+2100369962064a^9b^3)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{131072(31783404224a^{10}b^3+3163530656a^{11}b^3+20569120a^{12}b^3+1107568a^{13}b^3)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{131072(22797401497550684 4b^4-7438993408267660 8ab^4+340559682051260760a^2b^4)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{131072(3735455421134976a^3b^4+44357797204833156a^4b^4+1251405780261120a^5b^4)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{131072(1266971455650384a^6b^4+27724725718272a^7b^4+10295243007588a^8b^4+138281447040a^9b^4)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{131072(24624322008a^10b^4+148097664a^11b^4+13884156a^12b^4-2346315607120073 6b^5)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{131072(109033109373003376ab^5-11644472098601760a^2b^5+36927624682661328a^3b^5)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{131072(133812647496000a^4b^5+2004216495193440a^5b^5+28680451208640a^6b^5+27382474864800a^7b^5)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{131072(298829757600a^8b^5+104344772400a^9b^5+555366240a^{10}b^5+92561040a^{11}b^5)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{131072(108690721878121 68b^6-5985820063371456ab^6+14802425524183176a^2b^6)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{131072(-708321165615360a^3b^6+1713851879026320a^4b^6+1935009901440a^5b^6+41314983328080a^6b^6)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{131072(285600648960a^7b^6+255386589480a^8b^6+1091745600a^9b^6+354817320a^{10}b^6)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{131072(-717260777994464b^7+2594162140235248ab^7-458691506376576a^2b^7)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{131072(784325815238592a^3b^7-18518957835840a^4b^7+35960462445600a^5b^7+9170663040a^6b^7)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{131072(372721947840a^7b^7+982571040a^8b^7+818809200a^9b^7+1490646552407 10b^8)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{131072(-97562518884864ab^8+182692939157256a^2b^8-13725326951424a^3b^8+17944376279940a^4b^8)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{131072(-204374776320a^5b^8+328424370120a^6b^8+1166803110a^8b^8-62010293660 48b^9)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{131072(19239357998608ab^9-3911767205280a^2b^9+4975885470864a^3b^9-165209589600a^4b^9)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{131072(173969661360a^5b^9-764221920a^6b^9+1037158320a^7b^9+674268049224b^{10})}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{131072(-456852420288ab^{10}+717189756888a^2b^{10}-56410020480a^3b^{10}+54189742200a^4b^{10})}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{131072(-655047360a^5b^{10}+573166440a^6b^{10}-16994547232b^{11}+46979218832ab^{11}-9049664832a^2b^{11})}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{131072(9488348064a^3b^{11}-252439200a^4b^{11}+193536720a^5b^{11}+1010111388b^{12}-628138368ab^{12})}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{131072(860817672a^2b^{12}-49365888a^3b^{12}+38567100a^4b^{12}-13933216b^{13}+34705616ab^{13})}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{131072(-4746720a^2b^{13}+4272048a^3b^{13}+434808b^{14}-196416ab^{14}+237336a^2b^{14}-2464b^{15})}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{131072(5456ab^{15}+33b^{16})}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}\Bigg] \tag{14}$$

III. Evaluation of Main Result

Substituting $c=\frac{a+b+35}{2}$ and $z=\frac{1}{2}$ in equation (8), we get

$$(a-b)\ {}_2F_1\left[\begin{matrix}a,\ b\\ \frac{a+b+35}{2}\end{matrix};\ \frac{1}{2}\right]=a\ {}_2F_1\left[\begin{matrix}a+1,\ b\\ \frac{a+b+35}{2}\end{matrix};\ \frac{1}{2}\right]-b\ {}_2F_1\left[\begin{matrix}a,\ b+1\\ \frac{a+b+35}{2}\end{matrix};\ \frac{1}{2}\right]$$

Now involving derived result from Gauss second summation theorem, we get

$$L.H.S=a\ \frac{2^b\ \Gamma(\frac{a+b+35}{2})}{\Gamma(b)}\Bigg[\frac{\Gamma(\frac{b}{2})}{\Gamma(\frac{a+1}{2})}\Bigg\{\frac{65536(191898783962510625-45444140136823680 0a)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(421214220916438680a^2-215245451727154944a^3+69953125893139644a^4)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(-15611917903312640a^5+2505185827387880a^6-297403077939968a^7+26569595376038a^8)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(-1801370405120a^9+92751487400a^{10}-3600792832a^{11}+103613692a^{12}-2141440a^{13})}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(30040a^{14}-256a^{15}+a^{16}-158998505377975200b+1601586452087647920ab)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(-624388051013229216a^2b+672430138856900592a^3b-118482004312390688a^4b)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(45551364598847984a^5b-4435348958817568a^6b+824274801730864a^7b-47099407828704a^8b)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(4760242317072a^9b-158593548256a^{10}b+9023659216a^{11}b-161683808a^{12}b+4998224a^{13}b)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(-36960a^{14}b+528a^{15}b+9403043470403022 00b^2-167129866463313600ab^2)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(1565019021296531592a^2b^2-206106535912708992a^3b^2+225271255690647672a^4b^2)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(-18239227247368512a^5b^2+7239298092789576a^6b^2-361604047216896a^7b^2)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(691139341698 96a^8b^2-2073715803456a^9b^2+213043702872a^{10}b^2-3508382592a^{11}b^2)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(199059432a^{12}b^2-1374912a^{13}b^2+40920a^{14}b^2+1348118704909310 40b^3)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(1145685449186532144ab^3-4207285478037523 2a^2b^3+427559184167559840a^3b^3)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(-24609722912109280a^4b^3+26141054527921168a^5b^3-1085549498794112a^6b^3)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(422199872988608a^7b^3-11232092335200a^8b^3+2100369962064a^9b^3-31783404224a^{10}b^3)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(30040a^{14}-256a^{15}+a^{16}-158998505377975200b+1601586452087647920ab)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(-624388051013229216a^2b+672430138856900592a^3b-118482004312390688a^4b)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(45551364598847984a^5b-4435348958817568a^6b+824274801730864a^7b-47099407828704a^8b)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(4760242317072a^9b-158593548256a^{10}b+9023659216a^{11}b-161683808a^{12}b+4998224a^{13}b)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(-36960a^{14}b+528a^{15}b+9403043470403022 00b^2-167129866463313600ab^2)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(1565019021296531592a^2b^2-206106535912708992a^3b^2+22527125569064767 2a^4b^2)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(-18239227247368512a^5b^2+7239298092789576a^6b^2-3616040472168 96a^7b^2)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(691139341698 96a^8b^2-2073715803456a^9b^2+213043702872a^{10}b^2-3508382592a^{11}b^2)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(199059432a^{12}b^2-1374912a^{13}b^2+40920a^{14}b^2+1348118704909 31040b^3)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(1145685449186532144ab^3-42072854780375232a^2b^3+427559184167559840a^3b^3)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(-24609722912109280a^4b^3+26141054527921168a^5b^3-1085549498794112a^6b^3)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(422199872988608a^7b^3-11232092335200a^8b^3+2100369962064a^9b^3-31783404224a^{10}b^3)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(3163530656a^{11}b^3-20569120a^{12}b^3+1107568a^{13}b^3+2279740149755068 44b^4)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(74389934082676608ab^4+340559682051260760a^2b^4-3735455421134976a^3b^4)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(44357797204833156a^4b^4-1251405780261120a^5b^4+1266971455650384a^6b^4)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(-27724725718272a^7b^4+10295243007588a^8b^4-138281447040a^9b^4+24624322008a^{10}b^4)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(-148097664a^{11}b^4+13884156a^{12}b^4+234631560712007 36b^5+109033109373003376ab^5)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(11644472098601760a^2b^5+36927624682661328a^3b^5-133812647496000a^4b^5)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(2004216495193440a^5b^5-28680451208640a^6b^5+27382474864800a^7b^5-298829757600a^8b^5)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(104344772400a^9b^5-555366240a^{10}b^5+92561040a^{11}b^5+108690721878121 68b^6)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(5985820063371456ab^6+14802425524183176a^2b^6+708321165615360a^3b^6)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(1713851879026320a^4b^6-1935009901440a^5b^6+41314983328080a^6b^6-285600648960a^7b^6)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(255386589480a^8b^6-1091745600a^9b^6+354817320a^{10}b^6+7172607779944 64b^7)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(2594162140235248ab^7+458691506376576a^2b^7+784325815238592a^3b^7+18518957835840a^4b^7)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(35960462445600a^5b^7-9170663040a^6b^7+372721947840a^7b^7-982571040a^8b^7+818809200a^9b^7)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(1490646552407 10b^8+97562518884864ab^8+182692939157256a^2b^8+13725326951424a^3b^8)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(17944376279940a^4b^8+204374776320a^5b^8+328424370120a^6b^8+1166803110a^8b^8)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(6201029366048b^9+19239357998608ab^9+3911767205280a^2b^9+4975885470864a^3b^9)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(165209589600a^4b^9+173969661360a^5b^9+764221920a^6b^9+1037158320a^7b^9+674268049224b^{10})}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(456852420288ab^{10}+717189756888a^2b^{10}+56410020480a^3b^{10}+54189742200a^4b^{10})}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(655047360a^5b^{10}+573166440a^6b^{10}+16994547232b^{11}+46979218832ab^{11}+9049664832a^2b^{11})}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(9488348064a^3b^{11}+252439200a^4b^{11}+193536720a^5b^{11}+10101113888b^{12}+628138368ab^{12})}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(860817672a^2b^{12}+49365888a^3b^{12}+38567100a^4b^{12}+13933216b^{13}+34705616ab^{13})}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(4746720a^2b^{13}+4272048a^3b^{13}+434808b^{14}+196416ab^{14}+237336a^2b^{14}+2464b^{15})}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(5456ab^{15}+33b^{16})}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}\Bigg\}-$$

$$-\frac{\Gamma(\frac{b+1}{2})}{\Gamma(\frac{a+2}{2})}\Bigg\{\frac{65536(191898783962510625+15899850537797520 0a+940304347040302200a^2)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}$$

$$+\frac{65536(-134811870490931040a^3+22797401497550684 4a^4-23463156071200736a^5)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(108690721878121 68a^6-717260777994464a^7+149064655240710a^8-6201029366048a^9)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(674268049224a^{10}-16994547232a^{11}+1010111388a^{12}-13933216a^{13}+434808a^{14}-2464a^{15})}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(33a^{16}+454414013682368 00b+1601586452087647920ab+167129866463313600a^2b)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(1145685449186532144a^3b-7438993408267660 8a^4b+109033109373003376a^5b)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(-5985820063371456a^6b+2594162140235248a^7b-97562518884864a^8b+19239357998608a^9b)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(-456852420288a^{10}b+46979218832a^{11}b-628138368a^{12}b+34705616a^{13}b-196416a^{14}b)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(5456a^{15}b+421214220916438680b^2+624388051013229216ab^2+1565019021296531592a^2b^2)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(42072854780375232a^3b^2+340559682051260760a^4b^2-11644472098601760a^5b^2)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(14802425524183176a^6b^2-458691506376576a^7b^2+182692939157256a^8b^2-3911767205280a^9b^2)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(717189756888a^{10}b^2-9049664832a^{11}b^2+860817672a^{12}b^2-4746720a^{13}b^2+237336a^{14}b^2)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(215245451727154944b^3+67243013885690059 2ab^3+206106535912708992a^2b^3)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(427559184167559840a^3b^3+3735455421134976a^4b^3+36927624682661328a^5b^3)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(-708321165615360a^6b^3+784325815238592a^7b^3-13725326951424a^8b^3+4975885470864a^9b^3)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(-56410020480a^{10}b^3+9488348064a^{11}b^3-49365888a^{12}b^3+4272048a^{13}b^3)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(69953125893139644b^4+11848200431239068 8ab^4+225271255690647672a^2b^4)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(2460972291210928 0a^3b^4+4435779720483315 6a^4b^4+133812647496000a^5b^4)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(1713851879026320a^6b^4-18518957835840a^7b^4+17944376279940a^8b^4-165209589600a^9b^4)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(54189742200a^{10}b^4-252439200a^{11}b^4+38567100a^{12}b^4+156119179033126 40b^5)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(45551364598847984ab^5+18239227247368512a^2b^5+26141054527921168a^3b^5)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(12514057802611 20a^4b^5+2004216495193440a^5b^5+1935009901440a^6b^5+35960462445600a^7b^5)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(-204374776320a^8b^5+173969661360a^9b^5-655047360a^{10}b^5+193536720a^{11}b^5)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(250518582738788 0b^6+4435348958817568ab^6+7239298092789576a^2b^6)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(1085549498794112a^3b^6+1266971455650384a^4b^6+28680451208640a^5b^6+41314983328080a^6b^6)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(9170663040a^7b^6+328424370120a^8b^6-764221920a^9b^6+573166440a^{10}b^6+297403077939968b^7)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(824274801730864ab^7+361604047216896a^2b^7+422199872988608a^3b^7+27724725718272a^4b^7)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(27382474864800a^5b^7+285600648960a^6b^7+372721947840a^7b^7+1037158320a^9b^7)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(2656959537603 8b^8+47099407828704ab^8+69113934169896a^2b^8+11232092335200a^3b^8)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(10295243007588a^4b^8+298829757600a^5b^8+255386589480a^6b^8+982571040a^7b^8)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(1166803110a^8b^8+18013704051 20b^9+4760242317072ab^9+2073715803456a^2b^9)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(2100369962064a^3b^9+138281447040a^4b^9+104344772400a^5b^9+1091745600a^6b^9)}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(818809200a^7b^9+92751487400b^{10}+158593548256ab^{10}+213043702872a^2b^{10})}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(31783404224a^3b^{10}+24624322008a^4b^{10}+555366240a^5b^{10}+354817320a^6b^{10}+3600792832b^{11})}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(9023659216ab^{11}+3508382592a^2b^{11}+3163530656a^3b^{11}+148097664a^4b^{11}+92561040a^5b^{11})}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(103613692b^{12}+161683808ab^{12}+199059432a^2b^{12}+20569120a^3b^{12}+13884156a^4b^{12})}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(2141440b^{13}+4998224ab^{13}+1374912a^2b^{13}+1107568a^3b^{13}+30040b^{14}+36960ab^{14})}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}+$$

$$+\frac{65536(40920a^2b^{14}+256b^{15}+528ab^{15}+b^{16})}{\Big[\prod_{\varsigma=1}^{16}\{a-b-(2\varsigma-1)\}\Big]\Big[\prod_{\upsilon=1}^{17}\{a-b+(2\upsilon-1)\}\Big]}\Bigg\}\Bigg]-$$

$$-\frac{2^{b+1}\ \Gamma(\frac{a+b+35}{2})}{\Gamma(b)}\Bigg[\frac{\Gamma(\frac{b+1}{2})}{\Gamma(\frac{a}{2})}\Bigg\{\frac{65536(191898783962510625+454414401368236800a)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(42121422091643868 0a^2+21524545172715494 4a^3+6995312589313964 4a^4)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(15611917903312640a^5+2505185827387880a^6+297403077939968a^7+26569595376038a^8)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(1801370405120a^9+92751487400a^{10}+3600792832a^{11}+103613692a^{12}+2141440a^{13})}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(30040a^{14}+256a^{15}+a^{16}+158998505377975200b+1601586452087647920ab)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(624388051013229216a^2b+67243013885690059 2a^3b+11848200431239068 8a^4b)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(45551364598847984a^5b+4435348958817568a^6b+824274801730864a^7b+47099407828704a^8b)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(4760242317072a^9b+158593548256a^{10}b+9023659216a^{11}b+161683808a^{12}b+4998224a^{13}b)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(36960a^{14}b+528a^{15}b+940304347040302200b^2+167129866463313600ab^2)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(1565019021296531592a^2b^2+20610653591270899 2a^3b^2+22527125569064767 2a^4b^2)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(2004216495193440a^5b^5+28680451208640a^6b^5+27382474864800a^7b^5+298829757600a^8b^5)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(104344772400a^9b^5+555366240a^10b^5+92561040a^11b^5+108690721878121 68b^6)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(-5985820063371456ab^6+14802425524183176a^2b^6-708321165615360a^3b^6)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(1713851879026320a^4b^6+1935009901440a^5b^6+41314983328080a^6b^6+285600648960a^7b^6)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(255386589480a^8b^6+1091745600a^9b^6+354817320a^10b^6-7172607779944 64b^7)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(2594162140235248ab^7-458691506376576a^2b^7+784325815238592a^3b^7-18518957835840a^4b^7)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(35960462445600a^5b^7+9170663040a^6b^7+372721947840a^7b^7+982571040a^8b^7+818809200a^9b^7)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(1490646552407 10b^8-97562518884864ab^8+182692939157256a^2b^8-13725326951424a^3b^8)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(17944376279940a^4b^8-204374776320a^5b^8+328424370120a^6b^8+1166803110a^8b^8)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(-6201029366048b^9+1923935799860 8ab^9-3911767205280a^2b^9+4975885470864a^3b^9)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(-165209589600a^4b^9+173969661360a^5b^9-764221920a^6b^9+1037158320a^7b^9)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(674268049224b^{10}-456852420288ab^{10}+717189756888a^2b^{10}-56410020480a^3b^{10})}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(54189742200a^4b^{10}-655047360a^5b^{10}+573166440a^6b^{10}-16994547232b^{11}+46979218832ab^{11})}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(-9049664832a^2b^{11}+9488348064a^3b^{11}-252439200a^4b^{11}+193536720a^5b^{11}+1010111388b^{12})}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(-628138368ab^{12}+860817672a^2b^{12}-49365888a^3b^{12}+38567100a^4b^{12}-13933216b^{13})}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(34705616ab^{13}-4746720a^2b^{13}+4272048a^3b^{13}+434808b^{14}-196416ab^{14}+237336a^2b^{14})}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(-2464b^{15}+5456ab^{15}+33b^{16})}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}\Bigg\}-$$

$$-\frac{\Gamma(\frac{b+2}{2})}{\Gamma(\frac{a+1}{2})}\Bigg\{\frac{65536(191898783962510625-158998505377975200a+940304347040302200a^2)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}$$

$$+\frac{65536(134811870490931040a^3+22797401497550684a^4+2346315607120073a^5)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(10869072187812168a^6+717260777994464a^7+149064655240710a^8+6201029366048a^9)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(674268049224a^{10}+16994547232a^{11}+1010111388a^{12}+13933216a^{13}+434808a^{14}+2464a^{15})}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(33a^{16}-454414013682368000b+1601586452087647920ab-167129866463313600a^2b)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(1145685449186532144a^3b+7438993408267608a^4b+1090331093730033a^5b)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(5985820063371456a^6b+2594162140235248a^7b+97562518884864a^8b+19239357998608a^9b)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(456852420288a^{10}b+46979218832a^{11}b+628138368a^{12}b+34705616a^{13}b+196416a^{14}b)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(5456a^{15}b+421214220916438680b^2-624388051013229216ab^2+1565019021296531592a^2b^2)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(-42072854780375232a^3b^2+340559682051260760a^4b^2+11644472098601760a^5b^2)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(14802425524183176a^6b^2+458691506376576a^7b^2+18269239157256a^8b^2+3911767205280a^9b^2)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(717189756888a^{10}b^2+9049664832a^{11}b^2+860817672a^{12}b^2+4746720a^{13}b^2+237336a^{14}b^2)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(-215245451727154944b^3+67243013885690059 2ab^3-206106535912708992a^2b^3)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(427559184167559840a^3b^3-3735455421134976a^4b^3+36927624682661328a^5b^3)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(708321165615360a^6b^3+784325815238592a^7b^3+13725326951424a^8b^3+4975885470864a^9b^3)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(56410020480a^{10}b^3+9488348064a^{11}b^3+49365888a^{12}b^3+4272048a^{13}b^3)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(699531258931396 44b^4-11848200431239068 8ab^4+225271255690647672a^2b^4)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(-24609722912109280a^3b^4+44357797204833156a^4b^4-133812647496000a^5b^4)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(17138518790263 20a^6b^4+18518957835840a^7b^4+17944376279940a^8b^4+165209589600a^9b^4)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(54189742200a^{10}b^4+252439200a^{11}b^4+38567100a^{12}b^4-1561191790331 2640b^5)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(45551364598847984ab^5-1823922724736851 2a^2b^5+26141054527921168a^3b^5)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(-12514057802611 20a^4b^5+2004216495193440a^5b^5-1935009901440a^6b^5)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(359604624456000a^7b^5+204374776320a^8b^5+173969661360a^9b^5+655047360a^{10}b^5)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(193536720a^{11}b^5+2505185827387880b^6-4435348958817568ab^6+7239298092789576a^2b^6)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(-1085549498794112a^3b^6+1266971455650384a^4b^6-28680451208640a^5b^6)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(41314983328080a^6b^6-9170663040a^7b^6+328424370120a^8b^6+764221920a^9b^6)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(573166440a^{10}b^6-2974030779399968b^7+824274801730864ab^7-361604047216896a^2b^7)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(422199872988608a^3b^7-27724725718272a^4b^7+27382474864800a^5b^7-285600648960a^6b^7)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(372721947840a^7b^7+1037158320a^9b^7+2656959537603 8b^8-47099407828704ab^8)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(691139341698 96a^2b^8-11232092335200a^3b^8+10295243007588a^4b^8-298829757600a^5b^8)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(255386589480a^6b^8-982571040a^7b^8+1166803110a^8b^8-1801370405120b^9+4760242317072ab^9)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(-2073715803456a^2b^9+2100369962064a^3b^9-138281447040a^4b^9+104344772400a^5b^9)}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(-1091745600a^6b^9+818809200a^7b^9+92751487400b^{10}-158593548256ab^{10})}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(213043702872a^2b^{10}-31783404224a^3b^{10}+24624322008a^4b^{10}-555366240a^5b^{10})}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(354817320a^6b^{10}-3600792832b^{11}+9023659216ab^{11}-3508382592a^2b^{11}+3163530656a^3b^{11})}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(-148097664a^4b^{11}+92561040a^5b^{11}+103613692b^{12}-161683808ab^{12}+199059432a^2b^{12})}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(-20569120a^3b^{12}+13884156a^4b^{12}-2141440b^{13}+4998224ab^{13}-1374912a^2b^{13}+1107568a^3b^{13})}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}+$$

$$+\frac{65536(30040b^{14}-36960ab^{14}+40920a^2b^{14}-256b^{15}+528ab^{15}+b^{16})}{\Big[\prod_{\varphi=1}^{17}\{a-b-(2\varphi-1)\}\Big]\Big[\prod_{\omega=1}^{16}\{a-b+(2\omega-1)\}\Big]}\Bigg\}\Bigg]$$

After simplifing the result (14) is proved.

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