



GLOBAL JOURNAL OF SCIENCE FRONTIER RESEARCH
MATHEMATICS AND DECISION SCIENCES
Volume 13 Issue 2 Version 1.0 Year 2013
Type : Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4626 & Print ISSN: 0975-5896

Development of a Summation Formula in Connection with Hypergeometric and Gamma Function

By Salahuddin, R. K. Khola & S. R. Yadav
Mewar University

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GJSFR-F Classification : MSC 2010: 33C05, 33C20, 33C45, 33C70



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Development of a Summation Formula in Connection with Hypergeometric and Gamma Function

Salahuddin^α, R. K. Khola^σ & S. R. Yadav^ρ

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I. INTRODUCTION

Generalized Gaussian Hypergeometric function of one variable is defined by

$${}_A F_B \left[\begin{matrix} a_1, a_2, \dots, a_A ; \\ b_1, b_2, \dots, b_B ; \end{matrix} z \right] = \sum_{k=0}^{\infty} \frac{(a_1)_k (a_2)_k \dots (a_A)_k z^k}{(b_1)_k (b_2)_k \dots (b_B)_k k!}$$

or

$${}_A F_B \left[\begin{matrix} (a_A) ; \\ (b_B) ; \end{matrix} z \right] \equiv {}_A F_B \left[\begin{matrix} (a_j)_{j=1}^A ; \\ (b_j)_{j=1}^B ; \end{matrix} z \right] = \sum_{k=0}^{\infty} \frac{((a_A))_k z^k}{((b_B))_k k!} \quad (1)$$

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

Contiguous Relation is defined by

[Andrews p.363(9.16)]

$$(a-b) {}_2 F_1 \left[\begin{matrix} a, b ; \\ c ; \end{matrix} z \right] = a {}_2 F_1 \left[\begin{matrix} a+1, b ; \\ c ; \end{matrix} z \right] - b {}_2 F_1 \left[\begin{matrix} a, b+1 ; \\ c ; \end{matrix} z \right] \quad (2)$$

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

$${}_2 F_1 \left[\begin{matrix} a, b ; \\ \frac{a+b+1}{2} ; \end{matrix} \frac{1}{2} \right] = \frac{\Gamma(\frac{a+b+1}{2}) \Gamma(\frac{1}{2})}{\Gamma(\frac{a+1}{2}) \Gamma(\frac{b+1}{2})} \quad (3)$$

$$= \frac{2^{(b-1)} \Gamma(\frac{b}{2}) \Gamma(\frac{a+b+1}{2})}{\Gamma(b) \Gamma(\frac{a+1}{2})} \quad (4)$$

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

$${}_2 F_1 \left[\begin{matrix} a, b ; \\ \frac{a+b-1}{2} ; \end{matrix} \frac{1}{2} \right] = \sqrt{\pi} \left[\frac{\Gamma(\frac{a+b+1}{2})}{\Gamma(\frac{a+1}{2}) \Gamma(\frac{b+1}{2})} + \frac{2 \Gamma(\frac{a+b-1}{2})}{\Gamma(a) \Gamma(b)} \right] \quad (5)$$

Now using Legendre's duplication formula and Recurrence relation for Gamma function,

Author $\alpha \sigma \rho$: Mewar University, Gangrar, Chittorgarh (Rajasthan), India. E-mails : vsludn@gmail.com, sludh@yahoo.com

the above theorem can be written in the form

$${}_2F_1 \left[\begin{matrix} a, b ; \\ \frac{a+b-1}{2} ; \end{matrix} \frac{1}{2} \right] = \frac{2^{(b-1)} \Gamma(\frac{a+b-1}{2})}{\Gamma(b)} \left[\frac{\Gamma(\frac{b}{2})}{\Gamma(\frac{a-1}{2})} + \frac{2^{(a-b+1)} \Gamma(\frac{a}{2}) \Gamma(\frac{a+1}{2})}{\{\Gamma(a)\}^2} + \frac{\Gamma(\frac{b+2}{2})}{\Gamma(\frac{a+1}{2})} \right] \quad (6)$$

Recurrence relation is defined by

$$\Gamma(z+1) = z \Gamma(z) \quad (7)$$

II. MAIN FORMULA

$$\begin{aligned} & {}_2F_1 \left[\begin{matrix} a, b ; \\ \frac{a+b+37}{2} ; \end{matrix} \frac{1}{2} \right] = \frac{2^b \Gamma(\frac{a+b+37}{2})}{(a-b) \Gamma(b)} \times \\ & \times \left[\frac{\Gamma(\frac{b}{2})}{\Gamma(\frac{a+1}{2})} \left\{ \frac{131072a(-6332659870762850625 + 15188465029114325025a)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \right. \right. \\ & + \frac{131072a(-14354510691610713240a^2 + 7524314127912551832a^3 - 2523698606200763196a^4)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\ & + \frac{131072a(585146416702456764a^5 - 98283050207112680a^6 + 12319487399406824a^7)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\ & + \frac{131072a(-1174199725349222a^8 + 86014818744998a^9 - 4862169489320a^{10} + 211577650856a^{11})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\ & + \frac{131072a(-7020044668a^{12} + 174281212a^{13} - 3132760a^{14} + 38488a^{15} - 289a^{16} + a^{17})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\ & + \frac{131072a(25321878164717979075b - 19523841512219551440ab + 47611998316914930072a^2b)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\ & + \frac{131072a(-12330825664600006416a^3b + 7687192319327829444a^4b - 1038346142047282320a^5b)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\ & + \frac{131072a(283129024934512456a^6b - 22414624986818768a^7b + 3231412550832642a^8b)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\ & + \frac{131072a(-155206622884720a^9b + 12794409439592a^{10}b - 366157152816a^{11}b + 17543988644a^{12}b)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\ & + \frac{131072a(-274185520a^{13}b + 7297080a^{14}b - 47600a^{15}b + 595a^{16}b + 2162023563730570920b^2)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \end{aligned}$$

$$\begin{aligned}
& + \frac{131072a(64543172743280700360ab^2 - 11107176191996794920a^2b^2 + 26638838560038217560a^3b^2)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072a(-2867948454968860760a^4b^2 + 1845548308154811400a^5b^2 - 124702534849141480a^6b^2)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072a(35260676281141080a^7b^2 - 1500336516820680a^8b^2 + 222764240366360a^9b^2)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072a(-5784150923320a^{10}b^2 + 484991616200a^{11}b^2 - 6995348360a^{12}b^2 + 334423320a^{13}b^2)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072a(-2042040a^{14}b^2 + 52360a^{15}b^2 + 20437724329066130184b^3 + 2575515240037515888ab^3)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072a(33363872491954862088a^2b^3 - 2090930383100586720a^3b^3 + 4873159786850521320a^4b^3)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072a(-258151156619337520a^5b^3 + 163023689214444520a^6b^3 - 5972150284654400a^7b^3)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072a(1664379337479320a^8b^3 - 38955947128560a^9b^3 + 5678665839000a^{10}b^3 - 75925522400a^{11}b^3)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072a(6182616440a^{12}b^3 - 35709520a^{13}b^3 + 1623160a^{14}b^3 + 2610557152281130500b^4)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072a(15572154733539836460ab^4 + 732482294468001000a^2b^4 + 5851298044645884600a^3b^4)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072a(-163646117957822500a^4b^4 + 368261307782880820a^5b^4 - 10339842738560720a^6b^4)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072a(6256949185681040a^7b^4 - 125626624472580a^8b^4 + 33613458015060a^9b^4 - 406746041240a^{10}b^4)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072a(56687092280a^{11}b^4 - 305965660a^{12}b^4 + 23535820a^{13}b^4 + 2172550998730044660b^5)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072a(1004608127102243440ab^5 + 3242956850341887448a^2b^5 + 76055235302610256a^3b^5)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} +
\end{aligned}$$

$$\begin{aligned}
& + \frac{131072a(430788796363213596a^4b^5 - 5907351875594400a^5b^5 + 12781639991214864a^6b^5)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072a(-192523576889952a^7b^5 + 110161047202668a^8b^5 - 1135650386640a^9b^5 + 287146418328a^{10}b^5)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072a(-1401879024a^{11}b^5 + 183579396a^{12}b^5 + 185576437854776920b^6 + 768237818623401560ab^6)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072a(116735444133526680a^2b^6 + 263248376733566840a^3b^6 + 3399221138266800a^4b^6)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072a(14691849210062640a^5b^6 - 101267395503120a^6b^6 + 209987898508080a^7b^6)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072a(-1593776507400a^8b^6 + 855056340600a^9b^6 - 3530373000a^{10}b^6 + 834451800a^{11}b^6)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072a(59177652660443128b^7 + 37122270588325296ab^7 + 80953716224732296a^2b^7)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072a(5503690017256640a^3b^7 + 9557288389416240a^4b^7 + 69140320048800a^5b^7)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072a(238397117389200a^6b^7 - 782781595200a^7b^7 + 1551234029400a^8b^7 - 4639918800a^9b^7)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072a(2319959400a^{10}b^7 + 3287994950239450b^8 + 11248058823729750ab^8 + 2294394995865720a^2b^8)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072a(3442692988837960a^3b^8 + 115095771016380a^4b^8 + 161870114844900a^5b^8 + 616153923000a^6b^8)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072a(1745291809800a^7b^8 - 2149374150a^8b^8 + 4059928950a^9b^8 + 525728261810290b^9)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072a(368667646701200ab^9 + 648092452666120a^2b^9 + 56591247876240a^3b^9 + 64792026078780a^4b^9)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072a(1040587825200a^5b^9 + 1221799794600a^6b^9 + 1910554800a^7b^9 + 4537567650a^8b^9)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} +
\end{aligned}$$

$$\begin{aligned}
& + \frac{131072a(18727536011800b^{10} + 56336707180600ab^{10} + 12392461389000a^2b^{10} + 14735070827400a^3b^{10})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072a(571214351400a^4b^{10} + 526590436680a^5b^{10} + 3247943160a^6b^{10} + 3247943160a^7b^{10})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072a(1658243409592b^{11} + 1171241432144ab^{11} + 1773637762904a^2b^{11} + 151878786080a^3b^{11})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072a(136066994280a^4b^{11} + 1925658000a^5b^{11} + 1476337800a^6b^{11} + 36288133700b^{12})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072a(98497273420ab^{12} + 19917501240a^2b^{12} + 20082473320a^3b^{12} + 584116260a^4b^{12})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072a(417225900a^5b^{12} + 1818469940b^{13} + 1160821200ab^{13} + 1556610440a^2b^{13} + 94143280a^3b^{13})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072a(70607460a^4b^{13} + 22016360b^{14} + 54237480ab^{14} + 7652040a^2b^{14} + 6724520a^3b^{14} + 593096b^{15})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072a(272272ab^{15} + 324632a^2b^{15} + 2975b^{16} + 6545ab^{16} + 35b^{17})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072b(-6332659870762850625 + 25321878164717979075a + 2162023563730570920a^2)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(20437724329066130184a^3 + 2610557152281130500a^4 + 2172550998730044660a^5)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(185576437854776920a^6 + 59177652660443128a^7 + 3287994950239450a^8)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(525728261810290a^9 + 18727536011800a^{10} + 1658243409592a^{11} + 36288133700a^{12})}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(1818469940a^{13} + 22016360a^{14} + 593096a^{15} + 2975a^{16} + 35a^{17} + 15188465029114325025b)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(-19523841512219551440ab + 64543172743280700360a^2b + 2575515240037515888a^3b)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} +
\end{aligned}$$

$$\begin{aligned}
& + \frac{131072b(15572154733539836460a^4b + 1004608127102243440a^5b + 768237818623401560a^6b)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(37122270588325296a^7b + 11248058823729750a^8b + 368667646701200a^9b)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(56336707180600a^{10}b + 1171241432144a^{11}b + 98497273420a^{12}b + 1160821200a^{13}b)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(54237480a^{14}b + 272272a^{15}b + 6545a^{16}b - 14354510691610713240b^2)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(47611998316914930072ab^2 - 11107176191996794920a^2b^2 + 33363872491954862088a^3b^2)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(732482294468001000a^4b^2 + 3242956850341887448a^5b^2 + 116735444133526680a^6b^2)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(80953716224732296a^7b^2 + 2294394995865720a^8b^2 + 648092452666120a^9b^2)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(12392461389000a^{10}b^2 + 1773637762904a^{11}b^2 + 19917501240a^{12}b^2 + 1556610440a^{13}b^2)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(7652040a^{14}b^2 + 324632a^{15}b^2 + 7524314127912551832b^3 - 12330825664600006416ab^3)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(26638838560038217560a^2b^3 - 2090930383100586720a^3b^3 + 5851298044645884600a^4b^3)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(76055235302610256a^5b^3 + 263248376733566840a^6b^3 + 5503690017256640a^7b^3)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(3442692988837960a^8b^3 + 56591247876240a^9b^3 + 14735070827400a^{10}b^3 + 151878786080a^{11}b^3)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(20082473320a^{12}b^3 + 94143280a^{13}b^3 + 6724520a^{14}b^3 - 2523698606200763196b^4)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(7687192319327829444ab^4 - 2867948454968860760a^2b^4 + 4873159786850521320a^3b^4)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} +
\end{aligned}$$

$$\begin{aligned}
& + \frac{131072b(-163646117957822500a^4b^4 + 430788796363213596a^5b^4 + 3399221138266800a^6b^4)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(9557288389416240a^7b^4 + 115095771016380a^8b^4 + 64792026078780a^9b^4 + 571214351400a^{10}b^4)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(136066994280a^{11}b^4 + 584116260a^{12}b^4 + 70607460a^{13}b^4 + 585146416702456764b^5)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(-1038346142047282320ab^5 + 1845548308154811400a^2b^5 - 258151156619337520a^3b^5)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(368261307782880820a^4b^5 - 5907351875594400a^5b^5 + 14691849210062640a^6b^5)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(69140320048800a^7b^5 + 161870114844900a^8b^5 + 1040587825200a^9b^5 + 526590436680a^{10}b^5)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(1925658000a^{11}b^5 + 417225900a^{12}b^5 - 98283050207112680b^6 + 283129024934512456ab^6)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(-124702534849141480a^2b^6 + 163023689214444520a^3b^6 - 10339842738560720a^4b^6)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(12781639991214864a^5b^6 - 101267395503120a^6b^6 + 238397117389200a^7b^6)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(616153923000a^8b^6 + 1221799794600a^9b^6 + 3247943160a^{10}b^6 + 1476337800a^{11}b^6)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(12319487399406824b^7 - 22414624986818768ab^7 + 35260676281141080a^2b^7)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(-5972150284654400a^3b^7 + 6256949185681040a^4b^7 - 192523576889952a^5b^7)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(209987898508080a^6b^7 - 782781595200a^7b^7 + 1745291809800a^8b^7 + 1910554800a^9b^7)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(3247943160a^{10}b^7 - 1174199725349222b^8 + 3231412550832642ab^8 - 1500336516820680a^2b^8)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} +
\end{aligned}$$

$$\begin{aligned}
& + \frac{131072b(1664379337479320a^3b^8 - 125626624472580a^4b^8 + 110161047202668a^5b^8)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(-1593776507400a^6b^8 + 1551234029400a^7b^8 - 2149374150a^8b^8 + 4537567650a^9b^8)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(86014818744998b^9 - 155206622884720ab^9 + 222764240366360a^2b^9 - 38955947128560a^3b^9)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(33613458015060a^4b^9 - 1135650386640a^5b^9 + 855056340600a^6b^9 - 4639918800a^7b^9)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(4059928950a^8b^9 - 4862169489320b^{10} + 12794409439592ab^{10} - 5784150923320a^2b^{10})}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(5678665839000a^3b^{10} - 406746041240a^4b^{10} + 287146418328a^5b^{10} - 3530373000a^6b^{10})}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(2319959400a^7b^{10} + 211577650856b^{11} - 366157152816ab^{11} + 484991616200a^2b^{11})}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(-75925522400a^3b^{11} + 56687092280a^4b^{11} - 1401879024a^5b^{11} + 834451800a^6b^{11})}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(-7020044668b^{12} + 17543988644ab^{12} - 6995348360a^2b^{12} + 6182616440a^3b^{12})}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(-305965660a^4b^{12} + 183579396a^5b^{12} + 174281212b^{13} - 274185520ab^{13} + 334423320a^2b^{13})}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(-35709520a^3b^{13} + 23535820a^4b^{13} - 3132760b^{14} + 7297080ab^{14} - 2042040a^2b^{14})}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072b(1623160a^3b^{14} + 38488b^{15} - 47600ab^{15} + 52360a^2b^{15} - 289b^{16} + 595ab^{16} + b^{17})}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} \Bigg\} - \\
& - \frac{\Gamma(\frac{b+1}{2})}{\Gamma(\frac{a}{2})} \left\{ \frac{262144(6332659870762850625 + 25321878164717979075a - 2162023563730570920a^2)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \right. \\
& \left. + \frac{262144(20437724329066130184a^3 - 2610557152281130500a^4 + 2172550998730044660a^5)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} \right\}
\end{aligned}$$

$$\begin{aligned}
& + \frac{262144(-185576437854776920a^6 + 59177652660443128a^7 - 3287994950239450a^8)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(525728261810290a^9 - 18727536011800a^{10} + 1658243409592a^{11} - 36288133700a^{12})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(1818469940a^{13} - 22016360a^{14} + 593096a^{15} - 2975a^{16} + 35a^{17} + 15188465029114325025b)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(19523841512219551440ab + 64543172743280700360a^2b - 2575515240037515888a^3b)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(15572154733539836460a^4b - 1004608127102243440a^5b + 768237818623401560a^6b)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(-37122270588325296a^7b + 11248058823729750a^8b - 368667646701200a^9b)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(56336707180600a^{10}b - 1171241432144a^{11}b + 98497273420a^{12}b - 1160821200a^{13}b)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(54237480a^{14}b - 272272a^{15}b + 6545a^{16}b + 14354510691610713240b^2)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(47611998316914930072ab^2 + 11107176191996794920a^2b^2 + 33363872491954862088a^3b^2)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(-732482294468001000a^4b^2 + 3242956850341887448a^5b^2 - 116735444133526680a^6b^2)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(80953716224732296a^7b^2 - 2294394995865720a^8b^2 + 648092452666120a^9b^2)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(-12392461389000a^{10}b^2 + 1773637762904a^{11}b^2 - 19917501240a^{12}b^2 + 1556610440a^{13}b^2)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(-7652040a^{14}b^2 + 324632a^{15}b^2 + 7524314127912551832b^3 + 12330825664600006416ab^3)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(26638838560038217560a^2b^3 + 2090930383100586720a^3b^3 + 5851298044645884600a^4b^3)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} +
\end{aligned}$$

$$\begin{aligned}
& + \frac{262144(-76055235302610256a^5b^3 + 263248376733566840a^6b^3 - 5503690017256640a^7b^3)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(3442692988837960a^8b^3 - 56591247876240a^9b^3 + 14735070827400a^{10}b^3 - 151878786080a^{11}b^3)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(20082473320a^{12}b^3 - 94143280a^{13}b^3 + 6724520a^{14}b^3 + 2523698606200763196b^4)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(7687192319327829444ab^4 + 2867948454968860760a^2b^4 + 4873159786850521320a^3b^4)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(163646117957822500a^4b^4 + 430788796363213596a^5b^4 - 3399221138266800a^6b^4)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(9557288389416240a^7b^4 - 115095771016380a^8b^4 + 64792026078780a^9b^4 - 571214351400a^{10}b^4)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(136066994280a^{11}b^4 - 584116260a^{12}b^4 + 70607460a^{13}b^4 + 585146416702456764b^5)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(1038346142047282320ab^5 + 1845548308154811400a^2b^5 + 258151156619337520a^3b^5)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(368261307782880820a^4b^5 + 5907351875594400a^5b^5 + 14691849210062640a^6b^5)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(-69140320048800a^7b^5 + 161870114844900a^8b^5 - 1040587825200a^9b^5 + 526590436680a^{10}b^5)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(-1925658000a^{11}b^5 + 417225900a^{12}b^5 + 98283050207112680b^6 + 283129024934512456ab^6)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(124702534849141480a^2b^6 + 163023689214444520a^3b^6 + 10339842738560720a^4b^6)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(12781639991214864a^5b^6 + 101267395503120a^6b^6 + 238397117389200a^7b^6 - 616153923000a^8b^6)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(1221799794600a^9b^6 - 3247943160a^{10}b^6 + 1476337800a^{11}b^6 + 12319487399406824b^7)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} +
\end{aligned}$$

$$\begin{aligned}
& + \frac{262144(22414624986818768ab^7 + 35260676281141080a^2b^7 + 5972150284654400a^3b^7)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(6256949185681040a^4b^7 + 192523576889952a^5b^7 + 209987898508080a^6b^7 + 782781595200a^7b^7)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(1745291809800a^8b^7 - 1910554800a^9b^7 + 3247943160a^{10}b^7 + 1174199725349222b^8)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(3231412550832642ab^8 + 1500336516820680a^2b^8 + 1664379337479320a^3b^8)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(125626624472580a^4b^8 + 110161047202668a^5b^8 + 1593776507400a^6b^8 + 1551234029400a^7b^8)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(2149374150a^8b^8 + 4537567650a^9b^8 + 86014818744998b^9 + 155206622884720ab^9)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(222764240366360a^2b^9 + 38955947128560a^3b^9 + 33613458015060a^4b^9 + 1135650386640a^5b^9)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(855056340600a^6b^9 + 4639918800a^7b^9 + 4059928950a^8b^9 + 4862169489320b^{10})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(12794409439592ab^{10} + 5784150923320a^2b^{10} + 5678665839000a^3b^{10} + 406746041240a^4b^{10})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(287146418328a^5b^{10} + 3530373000a^6b^{10} + 2319959400a^7b^{10} + 211577650856b^{11})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(366157152816ab^{11} + 484991616200a^2b^{11} + 75925522400a^3b^{11} + 56687092280a^4b^{11})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(1401879024a^5b^{11} + 834451800a^6b^{11} + 7020044668b^{12} + 17543988644ab^{12} + 6995348360a^2b^{12})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(6182616440a^3b^{12} + 305965660a^4b^{12} + 183579396a^5b^{12} + 174281212b^{13} + 274185520ab^{13})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(334423320a^2b^{13} + 35709520a^3b^{13} + 23535820a^4b^{13} + 3132760b^{14} + 7297080ab^{14})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} +
\end{aligned}$$

$$\begin{aligned}
& + \frac{262144(2042040a^2b^{14} + 1623160a^3b^{14} + 38488b^{15} + 47600ab^{15} + 52360a^2b^{15} + 289b^{16})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(595ab^{16} + b^{17})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{262144(6332659870762850625 + 15188465029114325025a + 14354510691610713240a^2)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{262144(7524314127912551832a^3 + 2523698606200763196a^4 + 585146416702456764a^5)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{262144(98283050207112680a^6 + 12319487399406824a^7 + 1174199725349222a^8 + 86014818744998a^9)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{262144(4862169489320a^{10} + 211577650856a^{11} + 7020044668a^{12} + 174281212a^{13} + 3132760a^{14})}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{262144(38488a^{15} + 289a^{16} + a^{17} + 25321878164717979075b + 19523841512219551440ab)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{262144(47611998316914930072a^2b + 12330825664600006416a^3b + 7687192319327829444a^4b)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{262144(1038346142047282320a^5b + 283129024934512456a^6b + 22414624986818768a^7b)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{262144(3231412550832642a^8b + 155206622884720a^9b + 12794409439592a^{10}b + 366157152816a^{11}b)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{262144(17543988644a^{12}b + 274185520a^{13}b + 7297080a^{14}b + 47600a^{15}b + 595a^{16}b)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{262144(-2162023563730570920b^2 + 64543172743280700360ab^2 + 11107176191996794920a^2b^2)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{262144(26638838560038217560a^3b^2 + 2867948454968860760a^4b^2 + 1845548308154811400a^5b^2)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{262144(124702534849141480a^6b^2 + 35260676281141080a^7b^2 + 1500336516820680a^8b^2)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} +
\end{aligned}$$

$$\begin{aligned}
& + \frac{262144(222764240366360a^9b^2 + 5784150923320a^{10}b^2 + 484991616200a^{11}b^2 + 6995348360a^{12}b^2)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{262144(334423320a^{13}b^2 + 2042040a^{14}b^2 + 52360a^{15}b^2 + 20437724329066130184b^3)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{262144(-2575515240037515888ab^3 + 33363872491954862088a^2b^3 + 2090930383100586720a^3b^3)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{262144(4873159786850521320a^4b^3 + 258151156619337520a^5b^3 + 163023689214444520a^6b^3)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{262144(5972150284654400a^7b^3 + 1664379337479320a^8b^3 + 38955947128560a^9b^3)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{262144(5678665839000a^{10}b^3 + 75925522400a^{11}b^3 + 6182616440a^{12}b^3 + 35709520a^{13}b^3 + 1623160a^{14}b^3)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{262144(-2610557152281130500b^4 + 15572154733539836460ab^4 - 732482294468001000a^2b^4)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{262144(5851298044645884600a^3b^4 + 163646117957822500a^4b^4 + 368261307782880820a^5b^4)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{262144(10339842738560720a^6b^4 + 6256949185681040a^7b^4 + 125626624472580a^8b^4)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{262144(33613458015060a^9b^4 + 406746041240a^{10}b^4 + 56687092280a^{11}b^4 + 305965660a^{12}b^4)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{262144(23535820a^{13}b^4 + 2172550998730044660b^5 - 1004608127102243440ab^5)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{262144(3242956850341887448a^2b^5 - 76055235302610256a^3b^5 + 430788796363213596a^4b^5)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{262144(5907351875594400a^5b^5 + 12781639991214864a^6b^5 + 192523576889952a^7b^5)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{262144(110161047202668a^8b^5 + 1135650386640a^9b^5 + 287146418328a^{10}b^5 + 1401879024a^{11}b^5)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} +
\end{aligned}$$

$$\begin{aligned}
& + \frac{262144(183579396a^{12}b^5 - 185576437854776920b^6 + 768237818623401560ab^6)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{262144(-116735444133526680a^2b^6 + 263248376733566840a^3b^6 - 3399221138266800a^4b^6)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{262144(14691849210062640a^5b^6 + 101267395503120a^6b^6 + 209987898508080a^7b^6 + 1593776507400a^8b^6)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{262144(855056340600a^9b^6 + 3530373000a^{10}b^6 + 834451800a^{11}b^6 + 59177652660443128b^7)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{262144(-37122270588325296ab^7 + 80953716224732296a^2b^7 - 5503690017256640a^3b^7)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{262144(9557288389416240a^4b^7 - 69140320048800a^5b^7 + 238397117389200a^6b^7 + 782781595200a^7b^7)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{262144(1551234029400a^8b^7 + 4639918800a^9b^7 + 2319959400a^{10}b^7 - 3287994950239450b^8)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{262144(11248058823729750ab^8 - 2294394995865720a^2b^8 + 3442692988837960a^3b^8)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{262144(-115095771016380a^4b^8 + 161870114844900a^5b^8 - 616153923000a^6b^8 + 1745291809800a^7b^8)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{262144(2149374150a^8b^8 + 4059928950a^9b^8 + 525728261810290b^9 - 368667646701200ab^9)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{262144(648092452666120a^2b^9 - 56591247876240a^3b^9 + 64792026078780a^4b^9 - 1040587825200a^5b^9)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{262144(1221799794600a^6b^9 - 1910554800a^7b^9 + 4537567650a^8b^9 - 18727536011800b^{10})}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{262144(56336707180600ab^{10} - 12392461389000a^2b^{10} + 14735070827400a^3b^{10} - 571214351400a^4b^{10})}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{262144(526590436680a^5b^{10} - 3247943160a^6b^{10} + 3247943160a^7b^{10} + 1658243409592b^{11})}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} +
\end{aligned}$$

$$\begin{aligned}
 & + \frac{262144(-1171241432144ab^{11} + 1773637762904a^2b^{11} - 151878786080a^3b^{11} + 136066994280a^4b^{11})}{\left[\prod_{\varpi=1}^{18} \{a - b - (2\varpi - 1)\} \right] \left[\prod_{\varrho=1}^{17} \{a - b + (2\varrho - 1)\} \right]} \\
 & + \frac{262144(-1925658000a^5b^{11} + 1476337800a^6b^{11} - 36288133700b^{12} + 98497273420ab^{12})}{\left[\prod_{\varpi=1}^{18} \{a - b - (2\varpi - 1)\} \right] \left[\prod_{\varrho=1}^{17} \{a - b + (2\varrho - 1)\} \right]} \\
 & + \frac{262144(-19917501240a^2b^{12} + 20082473320a^3b^{12} - 584116260a^4b^{12} + 417225900a^5b^{12})}{\left[\prod_{\varpi=1}^{18} \{a - b - (2\varpi - 1)\} \right] \left[\prod_{\varrho=1}^{17} \{a - b + (2\varrho - 1)\} \right]} \\
 & + \frac{262144(1818469940b^{13} - 1160821200ab^{13} + 1556610440a^2b^{13} - 94143280a^3b^{13} + 70607460a^4b^{13})}{\left[\prod_{\varpi=1}^{18} \{a - b - (2\varpi - 1)\} \right] \left[\prod_{\varrho=1}^{17} \{a - b + (2\varrho - 1)\} \right]} \\
 & + \frac{262144(-22016360b^{14} + 54237480ab^{14} - 7652040a^2b^{14} + 6724520a^3b^{14} + 593096b^{15} - 272272ab^{15})}{\left[\prod_{\varpi=1}^{18} \{a - b - (2\varpi - 1)\} \right] \left[\prod_{\varrho=1}^{17} \{a - b + (2\varrho - 1)\} \right]} \\
 & + \left. \frac{262144(324632a^2b^{15} - 2975b^{16} + 6545ab^{16} + 35b^{17})}{\left[\prod_{\varpi=1}^{18} \{a - b - (2\varpi - 1)\} \right] \left[\prod_{\varrho=1}^{17} \{a - b + (2\varrho - 1)\} \right]} \right\} \tag{8}
 \end{aligned}$$

III. EVALUATION OF MAIN SUMMATION FORMULA (8)

Substituting $c = \frac{a+b+37}{2}$ and $z = \frac{1}{2}$ in equation (2), and after that involving Gauss theorem , we get

$$\begin{aligned}
 L.H.S = a \frac{2^b \Gamma(\frac{a+b+37}{2})}{\Gamma(b)} & \left[\frac{\Gamma(\frac{b}{2})}{\Gamma(\frac{a+1}{2})} \left\{ \frac{131072(-6332659870762850625 + 15188465029114325025a)}{\left[\prod_{\varepsilon=1}^{17} \{a - b - (2\varepsilon - 1)\} \right] \left[\prod_{\zeta=1}^{18} \{a - b + (2\zeta - 1)\} \right]} \right. \right. \\
 & + \frac{131072(-14354510691610713240a^2 + 7524314127912551832a^3 - 2523698606200763196a^4)}{\left[\prod_{\varepsilon=1}^{17} \{a - b - (2\varepsilon - 1)\} \right] \left[\prod_{\zeta=1}^{18} \{a - b + (2\zeta - 1)\} \right]} \\
 & + \frac{131072(585146416702456764a^5 - 98283050207112680a^6 + 12319487399406824a^7)}{\left[\prod_{\varepsilon=1}^{17} \{a - b - (2\varepsilon - 1)\} \right] \left[\prod_{\zeta=1}^{18} \{a - b + (2\zeta - 1)\} \right]} \\
 & + \frac{131072(-1174199725349222a^8 + 86014818744998a^9 - 4862169489320a^{10} + 211577650856a^{11})}{\left[\prod_{\varepsilon=1}^{17} \{a - b - (2\varepsilon - 1)\} \right] \left[\prod_{\zeta=1}^{18} \{a - b + (2\zeta - 1)\} \right]} \\
 & + \frac{131072(-7020044668a^{12} + 174281212a^{13} - 3132760a^{14} + 38488a^{15} - 289a^{16} + a^{17})}{\left[\prod_{\varepsilon=1}^{17} \{a - b - (2\varepsilon - 1)\} \right] \left[\prod_{\zeta=1}^{18} \{a - b + (2\zeta - 1)\} \right]} \\
 & + \frac{131072(25321878164717979075b - 19523841512219551440ab + 47611998316914930072a^2b)}{\left[\prod_{\varepsilon=1}^{17} \{a - b - (2\varepsilon - 1)\} \right] \left[\prod_{\zeta=1}^{18} \{a - b + (2\zeta - 1)\} \right]} \\
 & + \left. \frac{131072(-1233082566460006416a^3b + 7687192319327829444a^4b - 1038346142047282320a^5b)}{\left[\prod_{\varepsilon=1}^{17} \{a - b - (2\varepsilon - 1)\} \right] \left[\prod_{\zeta=1}^{18} \{a - b + (2\zeta - 1)\} \right]} \right\}
 \end{aligned}$$

$$\begin{aligned}
& + \frac{131072(283129024934512456a^6b - 22414624986818768a^7b + 3231412550832642a^8b)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(-155206622884720a^9b + 12794409439592a^{10}b - 366157152816a^{11}b + 17543988644a^{12}b)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(-274185520a^{13}b + 7297080a^{14}b - 47600a^{15}b + 595a^{16}b + 2162023563730570920b^2)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(64543172743280700360ab^2 - 11107176191996794920a^2b^2 + 26638838560038217560a^3b^2)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(-2867948454968860760a^4b^2 + 1845548308154811400a^5b^2 - 124702534849141480a^6b^2)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(35260676281141080a^7b^2 - 1500336516820680a^8b^2 + 222764240366360a^9b^2)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(-5784150923320a^{10}b^2 + 484991616200a^{11}b^2 - 6995348360a^{12}b^2 + 334423320a^{13}b^2)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(-2042040a^{14}b^2 + 52360a^{15}b^2 + 20437724329066130184b^3 + 2575515240037515888ab^3)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(3336387249195486208a^2b^3 - 2090930383100586720a^3b^3 + 4873159786850521320a^4b^3)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(-258151156619337520a^5b^3 + 163023689214444520a^6b^3 - 5972150284654400a^7b^3)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(1664379337479320a^8b^3 - 38955947128560a^9b^3 + 5678665839000a^{10}b^3 - 75925522400a^{11}b^3)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(6182616440a^{12}b^3 - 35709520a^{13}b^3 + 1623160a^{14}b^3 + 2610557152281130500b^4)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(15572154733539836460ab^4 + 732482294468001000a^2b^4 + 5851298044645884600a^3b^4)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(-163646117957822500a^4b^4 + 368261307782880820a^5b^4 - 10339842738560720a^6b^4)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} +
\end{aligned}$$

$$\begin{aligned}
& + \frac{131072(6256949185681040a^7b^4 - 125626624472580a^8b^4 + 33613458015060a^9b^4 - 406746041240a^{10}b^4)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(56687092280a^{11}b^4 - 305965660a^{12}b^4 + 23535820a^{13}b^4 + 2172550998730044660b^5)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(1004608127102243440ab^5 + 3242956850341887448a^2b^5 + 76055235302610256a^3b^5)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(430788796363213596a^4b^5 - 5907351875594400a^5b^5 + 12781639991214864a^6b^5)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(-192523576889952a^7b^5 + 110161047202668a^8b^5 - 1135650386640a^9b^5 + 287146418328a^{10}b^5)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(-1401879024a^{11}b^5 + 183579396a^{12}b^5 + 185576437854776920b^6 + 768237818623401560ab^6)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(116735444133526680a^2b^6 + 263248376733566840a^3b^6 + 3399221138266800a^4b^6)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(14691849210062640a^5b^6 - 101267395503120a^6b^6 + 209987898508080a^7b^6)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(-1593776507400a^8b^6 + 855056340600a^9b^6 - 3530373000a^{10}b^6 + 834451800a^{11}b^6)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(59177652660443128b^7 + 37122270588325296ab^7 + 80953716224732296a^2b^7)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(5503690017256640a^3b^7 + 9557288389416240a^4b^7 + 69140320048800a^5b^7)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(238397117389200a^6b^7 - 782781595200a^7b^7 + 1551234029400a^8b^7 - 4639918800a^9b^7)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(2319959400a^10b^7 + 3287994950239450b^8 + 11248058823729750ab^8 + 2294394995865720a^2b^8)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(3442692988837960a^3b^8 + 115095771016380a^4b^8 + 161870114844900a^5b^8 + 616153923000a^6b^8)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} +
\end{aligned}$$

$$\begin{aligned}
& + \frac{131072(1745291809800a^7b^8 - 2149374150a^8b^8 + 4059928950a^9b^8 + 525728261810290b^9)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(368667646701200ab^9 + 648092452666120a^2b^9 + 56591247876240a^3b^9 + 64792026078780a^4b^9)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(1040587825200a^5b^9 + 1221799794600a^6b^9 + 1910554800a^7b^9 + 4537567650a^8b^9)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(18727536011800b^{10} + 56336707180600ab^{10} + 12392461389000a^2b^{10} + 14735070827400a^3b^{10})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(571214351400a^4b^{10} + 526590436680a^5b^{10} + 3247943160a^6b^{10} + 3247943160a^7b^{10})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(1658243409592b^{11} + 1171241432144ab^{11} + 1773637762904a^2b^{11} + 151878786080a^3b^{11})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(136066994280a^4b^{11} + 1925658000a^5b^{11} + 1476337800a^6b^{11} + 36288133700b^{12})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(98497273420ab^{12} + 19917501240a^2b^{12} + 20082473320a^3b^{12} + 584116260a^4b^{12})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(417225900a^5b^{12} + 1818469940b^{13} + 1160821200ab^{13} + 1556610440a^2b^{13} + 94143280a^3b^{13})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(70607460a^4b^{13} + 22016360b^{14} + 54237480ab^{14} + 7652040a^2b^{14} + 6724520a^3b^{14} + 593096b^{15})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(272272ab^{15} + 324632a^2b^{15} + 2975b^{16} + 6545ab^{16} + 35b^{17})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} \Bigg\} - \\
& - \frac{\Gamma(\frac{b+1}{2})}{\Gamma(\frac{a+2}{2})} \left\{ \frac{131072(6332659870762850625 + 25321878164717979075a - 2162023563730570920a^2)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} \right. \\
& + \frac{131072(20437724329066130184a^3 - 2610557152281130500a^4 + 2172550998730044660a^5)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& \left. + \frac{131072(-185576437854776920a^6 + 59177652660443128a^7 - 3287994950239450a^8)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} \right\}
\end{aligned}$$

$$\begin{aligned}
& + \frac{131072(525728261810290a^9 - 18727536011800a^{10} + 1658243409592a^{11} - 36288133700a^{12})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(1818469940a^{13} - 22016360a^{14} + 593096a^{15} - 2975a^{16} + 35a^{17} + 15188465029114325025b)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(19523841512219551440ab + 64543172743280700360a^2b - 2575515240037515888a^3b)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(15572154733539836460a^4b - 1004608127102243440a^5b + 768237818623401560a^6b)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(-37122270588325296a^7b + 11248058823729750a^8b - 368667646701200a^9b)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(56336707180600a^{10}b - 1171241432144a^{11}b + 98497273420a^{12}b - 1160821200a^{13}b)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(54237480a^{14}b - 272272a^{15}b + 6545a^{16}b + 14354510691610713240b^2)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(47611998316914930072ab^2 + 11107176191996794920a^2b^2 + 33363872491954862088a^3b^2)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(-732482294468001000a^4b^2 + 3242956850341887448a^5b^2 - 116735444133526680a^6b^2)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(80953716224732296a^7b^2 - 2294394995865720a^8b^2 + 648092452666120a^9b^2)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(-12392461389000a^{10}b^2 + 1773637762904a^{11}b^2 - 19917501240a^{12}b^2 + 1556610440a^{13}b^2)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(-7652040a^{14}b^2 + 324632a^{15}b^2 + 7524314127912551832b^3 + 12330825664600006416ab^3)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(26638838560038217560a^2b^3 + 2090930383100586720a^3b^3 + 5851298044645884600a^4b^3)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(-76055235302610256a^5b^3 + 263248376733566840a^6b^3 - 5503690017256640a^7b^3)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} +
\end{aligned}$$

$$\begin{aligned}
& + \frac{131072(3442692988837960a^8b^3 - 56591247876240a^9b^3 + 14735070827400a^{10}b^3 - 151878786080a^{11}b^3)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(20082473320a^{12}b^3 - 94143280a^{13}b^3 + 6724520a^{14}b^3 + 2523698606200763196b^4)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(7687192319327829444ab^4 + 2867948454968860760a^2b^4 + 4873159786850521320a^3b^4)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(163646117957822500a^4b^4 + 430788796363213596a^5b^4 - 3399221138266800a^6b^4)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(9557288389416240a^7b^4 - 115095771016380a^8b^4 + 64792026078780a^9b^4 - 571214351400a^{10}b^4)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(136066994280a^{11}b^4 - 584116260a^{12}b^4 + 70607460a^{13}b^4 + 585146416702456764b^5)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(1038346142047282320ab^5 + 1845548308154811400a^2b^5 + 258151156619337520a^3b^5)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(368261307782880820a^4b^5 + 5907351875594400a^5b^5 + 14691849210062640a^6b^5)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(-69140320048800a^7b^5 + 161870114844900a^8b^5 - 1040587825200a^9b^5 + 526590436680a^{10}b^5)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(-1925658000a^{11}b^5 + 417225900a^{12}b^5 + 98283050207112680b^6 + 283129024934512456ab^6)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(124702534849141480a^2b^6 + 163023689214444520a^3b^6 + 10339842738560720a^4b^6)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(12781639991214864a^5b^6 + 101267395503120a^6b^6 + 238397117389200a^7b^6 - 616153923000a^8b^6)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(1221799794600a^9b^6 - 3247943160a^{10}b^6 + 1476337800a^{11}b^6 + 12319487399406824b^7)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(22414624986818768ab^7 + 35260676281141080a^2b^7 + 5972150284654400a^3b^7)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} +
\end{aligned}$$

$$\begin{aligned}
& + \frac{131072(6256949185681040a^{4b^7} + 192523576889952a^{5b^7} + 209987898508080a^{6b^7} + 782781595200a^{7b^7})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(1745291809800a^{8b^7} - 1910554800a^{9b^7} + 3247943160a^{10b^7} + 1174199725349222b^8)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(3231412550832642ab^8 + 1500336516820680a^2b^8 + 1664379337479320a^3b^8)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(125626624472580a^{4b^8} + 110161047202668a^{5b^8} + 1593776507400a^{6b^8} + 1551234029400a^{7b^8})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(2149374150a^{8b^8} + 4537567650a^{9b^8} + 86014818744998b^9 + 155206622884720ab^9)}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(222764240366360a^{2b^9} + 38955947128560a^{3b^9} + 33613458015060a^{4b^9} + 1135650386640a^{5b^9})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(855056340600a^{6b^9} + 4639918800a^{7b^9} + 4059928950a^{8b^9} + 4862169489320b^{10})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(12794409439592ab^{10} + 5784150923320a^{2b^{10}} + 5678665839000a^{3b^{10}} + 406746041240a^{4b^{10}})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(287146418328a^{5b^{10}} + 3530373000a^{6b^{10}} + 2319959400a^{7b^{10}} + 211577650856b^{11})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(366157152816ab^{11} + 484991616200a^{2b^{11}} + 75925522400a^{3b^{11}} + 56687092280a^{4b^{11}})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(1401879024a^{5b^{11}} + 834451800a^{6b^{11}} + 7020044668b^{12} + 17543988644ab^{12} + 6995348360a^{2b^{12}})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(6182616440a^{3b^{12}} + 305965660a^{4b^{12}} + 183579396a^{5b^{12}} + 174281212b^{13} + 274185520ab^{13})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(334423320a^{2b^{13}} + 35709520a^{3b^{13}} + 23535820a^{4b^{13}} + 3132760b^{14} + 7297080ab^{14})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} + \\
& + \frac{131072(2042040a^{2b^{14}} + 1623160a^{3b^{14}} + 38488b^{15} + 47600ab^{15} + 52360a^{2b^{15}} + 289b^{16})}{\left[\prod_{\varepsilon=1}^{17} \{a-b-(2\varepsilon-1)\} \right] \left[\prod_{\zeta=1}^{18} \{a-b+(2\zeta-1)\} \right]} +
\end{aligned}$$

$$\begin{aligned}
 & \left. + \frac{131072(595ab^{16} + b^{17})}{\left[\prod_{\varepsilon=1}^{17} \{a - b - (2\varepsilon - 1)\} \right] \left[\prod_{\zeta=1}^{18} \{a - b + (2\zeta - 1)\} \right]} \right\} - \\
 & - \frac{2^{b+1} \Gamma\left(\frac{a+b+37}{2}\right)}{\Gamma(b)} \left[\frac{\Gamma\left(\frac{b+1}{2}\right)}{\Gamma\left(\frac{a}{2}\right)} \left\{ \frac{131072(6332659870762850625 + 15188465029114325025a)}{\left[\prod_{\varpi=1}^{18} \{a - b - (2\varpi - 1)\} \right] \left[\prod_{\rho=1}^{17} \{a - b + (2\rho - 1)\} \right]} + \right. \right. \\
 & + \frac{131072(14354510691610713240a^2 + 7524314127912551832a^3 + 2523698606200763196a^4)}{\left[\prod_{\varpi=1}^{18} \{a - b - (2\varpi - 1)\} \right] \left[\prod_{\rho=1}^{17} \{a - b + (2\rho - 1)\} \right]} + \\
 & + \frac{131072(585146416702456764a^5 + 98283050207112680a^6 + 12319487399406824a^7)}{\left[\prod_{\varpi=1}^{18} \{a - b - (2\varpi - 1)\} \right] \left[\prod_{\rho=1}^{17} \{a - b + (2\rho - 1)\} \right]} + \\
 & + \frac{131072(1174199725349222a^8 + 86014818744998a^9 + 4862169489320a^{10} + 211577650856a^{11})}{\left[\prod_{\varpi=1}^{18} \{a - b - (2\varpi - 1)\} \right] \left[\prod_{\rho=1}^{17} \{a - b + (2\rho - 1)\} \right]} + \\
 & + \frac{131072(7020044668a^{12} + 174281212a^{13} + 3132760a^{14} + 38488a^{15} + 289a^{16} + a^{17})}{\left[\prod_{\varpi=1}^{18} \{a - b - (2\varpi - 1)\} \right] \left[\prod_{\rho=1}^{17} \{a - b + (2\rho - 1)\} \right]} + \\
 & + \frac{131072(25321878164717979075b + 19523841512219551440ab + 47611998316914930072a^2b)}{\left[\prod_{\varpi=1}^{18} \{a - b - (2\varpi - 1)\} \right] \left[\prod_{\rho=1}^{17} \{a - b + (2\rho - 1)\} \right]} + \\
 & + \frac{131072(12330825664600006416a^3b + 7687192319327829444a^4b + 1038346142047282320a^5b)}{\left[\prod_{\varpi=1}^{18} \{a - b - (2\varpi - 1)\} \right] \left[\prod_{\rho=1}^{17} \{a - b + (2\rho - 1)\} \right]} + \\
 & + \frac{131072(283129024934512456a^6b + 22414624986818768a^7b + 3231412550832642a^8b)}{\left[\prod_{\varpi=1}^{18} \{a - b - (2\varpi - 1)\} \right] \left[\prod_{\rho=1}^{17} \{a - b + (2\rho - 1)\} \right]} + \\
 & + \frac{131072(155206622884720a^9b + 12794409439592a^{10}b + 366157152816a^{11}b + 17543988644a^{12}b)}{\left[\prod_{\varpi=1}^{18} \{a - b - (2\varpi - 1)\} \right] \left[\prod_{\rho=1}^{17} \{a - b + (2\rho - 1)\} \right]} + \\
 & + \frac{131072(274185520a^{13}b + 7297080a^{14}b + 47600a^{15}b + 595a^{16}b - 2162023563730570920b^2)}{\left[\prod_{\varpi=1}^{18} \{a - b - (2\varpi - 1)\} \right] \left[\prod_{\rho=1}^{17} \{a - b + (2\rho - 1)\} \right]} + \\
 & + \frac{131072(64543172743280700360ab^2 + 11107176191996794920a^2b^2 + 26638838560038217560a^3b^2)}{\left[\prod_{\varpi=1}^{18} \{a - b - (2\varpi - 1)\} \right] \left[\prod_{\rho=1}^{17} \{a - b + (2\rho - 1)\} \right]} + \\
 & + \frac{131072(2867948454968860760a^4b^2 + 1845548308154811400a^5b^2 + 124702534849141480a^6b^2)}{\left[\prod_{\varpi=1}^{18} \{a - b - (2\varpi - 1)\} \right] \left[\prod_{\rho=1}^{17} \{a - b + (2\rho - 1)\} \right]} + \\
 & + \frac{131072(35260676281141080a^7b^2 + 1500336516820680a^8b^2 + 222764240366360a^9b^2)}{\left[\prod_{\varpi=1}^{18} \{a - b - (2\varpi - 1)\} \right] \left[\prod_{\rho=1}^{17} \{a - b + (2\rho - 1)\} \right]} +
 \end{aligned}$$

$$\begin{aligned}
& + \frac{131072(5784150923320a^{10}b^2 + 484991616200a^{11}b^2 + 6995348360a^{12}b^2 + 334423320a^{13}b^2)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(2042040a^{14}b^2 + 52360a^{15}b^2 + 20437724329066130184b^3 - 2575515240037515888ab^3)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(33363872491954862088a^2b^3 + 2090930383100586720a^3b^3 + 4873159786850521320a^4b^3)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(258151156619337520a^5b^3 + 163023689214444520a^6b^3 + 5972150284654400a^7b^3)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(1664379337479320a^8b^3 + 38955947128560a^9b^3 + 5678665839000a^{10}b^3 + 75925522400a^{11}b^3)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(6182616440a^{12}b^3 + 35709520a^{13}b^3 + 1623160a^{14}b^3 - 2610557152281130500b^4)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(15572154733539836460ab^4 - 732482294468001000a^2b^4 + 5851298044645884600a^3b^4)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(163646117957822500a^4b^4 + 368261307782880820a^5b^4 + 10339842738560720a^6b^4)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(6256949185681040a^7b^4 + 125626624472580a^8b^4 + 33613458015060a^9b^4 + 406746041240a^{10}b^4)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(56687092280a^{11}b^4 + 305965660a^{12}b^4 + 23535820a^{13}b^4 + 2172550998730044660b^5)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(-1004608127102243440ab^5 + 3242956850341887448a^2b^5 - 76055235302610256a^3b^5)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(430788796363213596a^4b^5 + 5907351875594400a^5b^5 + 12781639991214864a^6b^5)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(192523576889952a^7b^5 + 110161047202668a^8b^5 + 1135650386640a^9b^5 + 287146418328a^{10}b^5)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(1401879024a^{11}b^5 + 183579396a^{12}b^5 - 185576437854776920b^6 + 768237818623401560ab^6)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} +
\end{aligned}$$

$$\begin{aligned}
& + \frac{131072(-116735444133526680a^2b^6 + 263248376733566840a^3b^6 - 3399221138266800a^4b^6)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(14691849210062640a^5b^6 + 101267395503120a^6b^6 + 209987898508080a^7b^6)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(1593776507400a^8b^6 + 855056340600a^9b^6 + 3530373000a^{10}b^6 + 834451800a^{11}b^6)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(59177652660443128b^7 - 37122270588325296ab^7 + 80953716224732296a^2b^7)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(-5503690017256640a^3b^7 + 9557288389416240a^4b^7 - 69140320048800a^5b^7)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(238397117389200a^6b^7 + 782781595200a^7b^7 + 1551234029400a^8b^7 + 4639918800a^9b^7)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(2319959400a^{10}b^7 - 3287994950239450b^8 + 11248058823729750ab^8 - 2294394995865720a^2b^8)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(3442692988837960a^3b^8 - 115095771016380a^4b^8 + 161870114844900a^5b^8 - 616153923000a^6b^8)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(1745291809800a^7b^8 + 2149374150a^8b^8 + 4059928950a^9b^8 + 525728261810290b^9)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(-368667646701200ab^9 + 648092452666120a^2b^9 - 56591247876240a^3b^9 + 64792026078780a^4b^9)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(-1040587825200a^5b^9 + 1221799794600a^6b^9 - 1910554800a^7b^9 + 4537567650a^8b^9)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(-18727536011800b^{10} + 56336707180600ab^{10} - 12392461389000a^2b^{10} + 14735070827400a^3b^{10})}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(-571214351400a^4b^{10} + 526590436680a^5b^{10} - 3247943160a^6b^{10} + 3247943160a^7b^{10})}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(1658243409592b^{11} - 1171241432144ab^{11} + 1773637762904a^2b^{11} - 151878786080a^3b^{11})}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} +
\end{aligned}$$

$$\begin{aligned}
& + \frac{131072(136066994280a^4b^{11} - 1925658000a^5b^{11} + 1476337800a^6b^{11} - 36288133700b^{12})}{\left[\prod_{\varpi=1}^{18} \{a - b - (2\varpi - 1)\} \right] \left[\prod_{\varrho=1}^{17} \{a - b + (2\varrho - 1)\} \right]} + \\
& + \frac{131072(98497273420ab^{12} - 19917501240a^2b^{12} + 20082473320a^3b^{12} - 584116260a^4b^{12})}{\left[\prod_{\varpi=1}^{18} \{a - b - (2\varpi - 1)\} \right] \left[\prod_{\varrho=1}^{17} \{a - b + (2\varrho - 1)\} \right]} + \\
& + \frac{131072(417225900a^5b^{12} + 1818469940b^{13} - 1160821200ab^{13} + 1556610440a^2b^{13} - 94143280a^3b^{13})}{\left[\prod_{\varpi=1}^{18} \{a - b - (2\varpi - 1)\} \right] \left[\prod_{\varrho=1}^{17} \{a - b + (2\varrho - 1)\} \right]} + \\
& + \frac{131072(70607460a^4b^{13} - 22016360b^{14} + 54237480ab^{14} - 7652040a^2b^{14} + 6724520a^3b^{14} + 593096b^{15})}{\left[\prod_{\varpi=1}^{18} \{a - b - (2\varpi - 1)\} \right] \left[\prod_{\varrho=1}^{17} \{a - b + (2\varrho - 1)\} \right]} + \\
& + \frac{131072(-272272ab^{15} + 324632a^2b^{15} - 2975b^{16} + 6545ab^{16} + 35b^{17})}{\left[\prod_{\varpi=1}^{18} \{a - b - (2\varpi - 1)\} \right] \left[\prod_{\varrho=1}^{17} \{a - b + (2\varrho - 1)\} \right]} \Bigg\} - \\
& - \frac{\Gamma(\frac{b+2}{2})}{\Gamma(\frac{a+1}{2})} \left\{ \frac{131072(-6332659870762850625 + 25321878164717979075a + 2162023563730570920a^2)}{\left[\prod_{\varpi=1}^{18} \{a - b - (2\varpi - 1)\} \right] \left[\prod_{\varrho=1}^{17} \{a - b + (2\varrho - 1)\} \right]} \right. \\
& + \frac{131072(20437724329066130184a^3 + 2610557152281130500a^4 + 2172550998730044660a^5)}{\left[\prod_{\varpi=1}^{18} \{a - b - (2\varpi - 1)\} \right] \left[\prod_{\varrho=1}^{17} \{a - b + (2\varrho - 1)\} \right]} \\
& + \frac{131072(185576437854776920a^6 + 59177652660443128a^7 + 3287994950239450a^8 + 525728261810290a^9)}{\left[\prod_{\varpi=1}^{18} \{a - b - (2\varpi - 1)\} \right] \left[\prod_{\varrho=1}^{17} \{a - b + (2\varrho - 1)\} \right]} + \\
& + \frac{131072(18727536011800a^{10} + 1658243409592a^{11} + 36288133700a^{12} + 1818469940a^{13} + 22016360a^{14})}{\left[\prod_{\varpi=1}^{18} \{a - b - (2\varpi - 1)\} \right] \left[\prod_{\varrho=1}^{17} \{a - b + (2\varrho - 1)\} \right]} + \\
& + \frac{131072(593096a^{15} + 2975a^{16} + 35a^{17} + 15188465029114325025b - 19523841512219551440ab)}{\left[\prod_{\varpi=1}^{18} \{a - b - (2\varpi - 1)\} \right] \left[\prod_{\varrho=1}^{17} \{a - b + (2\varrho - 1)\} \right]} + \\
& + \frac{131072(64543172743280700360a^2b + 2575515240037515888a^3b + 15572154733539836460a^4b)}{\left[\prod_{\varpi=1}^{18} \{a - b - (2\varpi - 1)\} \right] \left[\prod_{\varrho=1}^{17} \{a - b + (2\varrho - 1)\} \right]} + \\
& + \frac{131072(1004608127102243440a^5b + 768237818623401560a^6b + 37122270588325296a^7b)}{\left[\prod_{\varpi=1}^{18} \{a - b - (2\varpi - 1)\} \right] \left[\prod_{\varrho=1}^{17} \{a - b + (2\varrho - 1)\} \right]} + \\
& + \frac{131072(11248058823729750a^8b + 368667646701200a^9b + 56336707180600a^{10}b + 1171241432144a^{11}b)}{\left[\prod_{\varpi=1}^{18} \{a - b - (2\varpi - 1)\} \right] \left[\prod_{\varrho=1}^{17} \{a - b + (2\varrho - 1)\} \right]} + \\
& + \frac{131072(98497273420a^{12}b + 1160821200a^{13}b + 54237480a^{14}b + 272272a^{15}b + 6545a^{16}b)}{\left[\prod_{\varpi=1}^{18} \{a - b - (2\varpi - 1)\} \right] \left[\prod_{\varrho=1}^{17} \{a - b + (2\varrho - 1)\} \right]} +
\end{aligned}$$

$$\begin{aligned}
& + \frac{131072(-14354510691610713240b^2 + 47611998316914930072ab^2 - 11107176191996794920a^2b^2)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(33363872491954862088a^3b^2 + 732482294468001000a^4b^2 + 3242956850341887448a^5b^2)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(116735444133526680a^6b^2 + 80953716224732296a^7b^2 + 2294394995865720a^8b^2)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(648092452666120a^9b^2 + 12392461389000a^{10}b^2 + 1773637762904a^{11}b^2 + 19917501240a^{12}b^2)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(1556610440a^{13}b^2 + 7652040a^{14}b^2 + 324632a^{15}b^2 + 7524314127912551832b^3)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(-12330825664600006416ab^3 + 26638838560038217560a^2b^3 - 2090930383100586720a^3b^3)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(5851298044645884600a^4b^3 + 76055235302610256a^5b^3 + 263248376733566840a^6b^3)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(5503690017256640a^7b^3 + 3442692988837960a^8b^3 + 56591247876240a^9b^3)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(14735070827400a^{10}b^3 + 151878786080a^{11}b^3 + 20082473320a^{12}b^3 + 94143280a^{13}b^3)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(6724520a^{14}b^3 - 2523698606200763196b^4 + 7687192319327829444ab^4)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(-2867948454968860760a^2b^4 + 4873159786850521320a^3b^4 - 163646117957822500a^4b^4)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(430788796363213596a^5b^4 + 3399221138266800a^6b^4 + 9557288389416240a^7b^4)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(115095771016380a^8b^4 + 64792026078780a^9b^4 + 571214351400a^{10}b^4 + 136066994280a^{11}b^4)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(584116260a^{12}b^4 + 70607460a^{13}b^4 + 585146416702456764b^5 - 1038346142047282320ab^5)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} +
\end{aligned}$$

$$\begin{aligned}
& + \frac{131072(1845548308154811400a^2b^5 - 258151156619337520a^3b^5 + 368261307782880820a^4b^5)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(-5907351875594400a^5b^5 + 14691849210062640a^6b^5 + 69140320048800a^7b^5)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(161870114844900a^8b^5 + 1040587825200a^9b^5 + 526590436680a^{10}b^5 + 1925658000a^{11}b^5)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(417225900a^{12}b^5 - 98283050207112680b^6 + 283129024934512456ab^6)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(-124702534849141480a^2b^6 + 163023689214444520a^3b^6 - 10339842738560720a^4b^6)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(12781639991214864a^5b^6 - 101267395503120a^6b^6 + 238397117389200a^7b^6 + 616153923000a^8b^6)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(1221799794600a^9b^6 + 3247943160a^{10}b^6 + 1476337800a^{11}b^6 + 12319487399406824b^7)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(-22414624986818768ab^7 + 35260676281141080a^2b^7 - 5972150284654400a^3b^7)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(6256949185681040a^4b^7 - 192523576889952a^5b^7 + 209987898508080a^6b^7 - 782781595200a^7b^7)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(1745291809800a^8b^7 + 1910554800a^9b^7 + 3247943160a^{10}b^7 - 1174199725349222b^8)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(3231412550832642ab^8 - 1500336516820680a^2b^8 + 1664379337479320a^3b^8)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(-125626624472580a^4b^8 + 110161047202668a^5b^8 - 1593776507400a^6b^8 + 1551234029400a^7b^8)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(-2149374150a^8b^8 + 4537567650a^9b^8 + 86014818744998b^9 - 155206622884720ab^9)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(222764240366360a^2b^9 - 38955947128560a^3b^9 + 33613458015060a^4b^9 - 1135650386640a^5b^9)}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} +
\end{aligned}$$

$$\begin{aligned}
& + \frac{131072(855056340600a^6b^9 - 4639918800a^7b^9 + 4059928950a^8b^9 - 4862169489320b^{10})}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(12794409439592ab^{10} - 5784150923320a^2b^{10} + 5678665839000a^3b^{10} - 406746041240a^4b^{10})}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(287146418328a^5b^{10} - 3530373000a^6b^{10} + 2319959400a^7b^{10} + 211577650856b^{11})}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(-366157152816ab^{11} + 484991616200a^2b^{11} - 75925522400a^3b^{11} + 56687092280a^4b^{11})}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(-1401879024a^5b^{11} + 834451800a^6b^{11} - 7020044668b^{12} + 17543988644ab^{12} - 6995348360a^2b^{12})}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(6182616440a^3b^{12} - 305965660a^4b^{12} + 183579396a^5b^{12} + 174281212b^{13} - 274185520ab^{13})}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(334423320a^2b^{13} - 35709520a^3b^{13} + 23535820a^4b^{13} - 3132760b^{14} + 7297080ab^{14})}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \frac{131072(-2042040a^2b^{14} + 1623160a^3b^{14} + 38488b^{15} - 47600ab^{15} + 52360a^2b^{15} - 289b^{16})}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} + \\
& + \left. \frac{131072(595ab^{16} + b^{17})}{\left[\prod_{\varpi=1}^{18} \{a-b-(2\varpi-1)\} \right] \left[\prod_{\varrho=1}^{17} \{a-b+(2\varrho-1)\} \right]} \right\}
\end{aligned}$$

On simplification the result (8) is derived.

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