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# A Summation Formula of Half Argument Collocated With Contiguous Relation

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*Keywords* : Gauss second summation theorem, Recurrence relation

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# A Summation Formula of Half Argument Collocated With Contiguous Relation

Salahuddin<sup>a</sup>, M.P. Chaudhary<sup>a</sup>, Vinesh Kumar<sup>b</sup>

**Abstract** - The main aim of the present paper is to compute a summation formula linked with recurrence relation and contiguous relation.

**Keywords** : Gauss second summation theorem, Recurrence relation.

## 1. INTRODUCTION

Generalized Gaussian Hypergeometric function of one variable is defined by

$${}_A F_B \left[ \begin{matrix} a_1, a_2, \dots, a_A ; \\ b_1, b_2, \dots, b_B ; \end{matrix} z \right] = \sum_{k=0}^{\infty} \frac{(a_1)_k (a_2)_k \dots (a_A)_k z^k}{(b_1)_k (b_2)_k \dots (b_B)_k k!} \quad (1)$$

Where the parameters  $a_1, a_2, \dots, a_A$  and  $b_1, b_2, \dots, b_B$  are neither zero nor negative integers and  $A, B$  are non negative integers.

If  $A \leq B$ , then series  ${}_A F_B$  is always convergent for all finite values of  $z$  (real or complex).

If  $A = B + 1$ , then series  ${}_A F_B$  is convergent when  $|z| < 1$ .

Contiguous Relation is defined by [Andrews p.363(9.16), E. D. p.51(10)]

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

Gauss Second Summation Theorem is defined by [Prudnikov,491(7.3.7.5)]

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

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

In a monograph of Prudnikov et al., a summation theorem is given in the form [Prudnikov, p.491(7.3.7.3)]

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

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

$${}_2 F_1 \left[ \begin{matrix} a, b ; \\ \frac{a+b-1}{2} ; \end{matrix} \frac{1}{2} \right] = \frac{2^{(b-1)}\Gamma(\frac{a+b-1}{2})}{\Gamma(b)} \left[ \frac{\Gamma(\frac{b}{2})}{\Gamma(\frac{a-1}{2})} + \frac{2^{(a-b+1)}\Gamma(\frac{a}{2})\Gamma(\frac{a+1}{2})}{\{\Gamma(a)\}^2} + \frac{\Gamma(\frac{b+2}{2})}{\Gamma(\frac{a+1}{2})} \right] \quad (6)$$

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Recurrence Relation is defined by

$$\Gamma(\zeta + 1) = \zeta \Gamma(\zeta) \tag{7}$$

## II. MAIN SUMMATION FORMULA

$$\begin{aligned}
 & {}_2F_1 \left[ \begin{matrix} a, b ; \\ \frac{a+b+44}{2} ; \end{matrix} \frac{1}{2} \right] = \frac{2^b \Gamma(\frac{a+b+44}{2})}{(a-b) \Gamma(b)} \times \\
 & \times \left[ \frac{\Gamma(\frac{b}{2})}{\Gamma(\frac{a}{2})} \left\{ \frac{2097152(2551082656125828464640000a - 4589065620297665740800000a^2)}{\left[ \prod_{\heartsuit=0}^{20} \{a-b-2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a-b+2\diamond\} \right]} + \right. \right. \\
 & + \frac{2097152(3618572796858388709376000a^3 - 1687018700164430403993600a^4)}{\left[ \prod_{\heartsuit=0}^{20} \{a-b-2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a-b+2\diamond\} \right]} + \\
 & + \frac{2097152(526766035608866113191936a^5 - 117964128844107192729600a^6)}{\left[ \prod_{\heartsuit=0}^{20} \{a-b-2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a-b+2\diamond\} \right]} + \\
 & + \frac{2097152(19769717617137637130240a^7 - 2550445204778112122880a^8)}{\left[ \prod_{\heartsuit=0}^{20} \{a-b-2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a-b+2\diamond\} \right]} + \\
 & + \frac{2097152(258174206358711894016a^9 - 20771430124567449600a^{10})}{\left[ \prod_{\heartsuit=0}^{20} \{a-b-2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a-b+2\diamond\} \right]} + \\
 & + \frac{2097152(1338915850793364480a^{11} - 69419613644559360a^{12} + 2895430910817536a^{13})}{\left[ \prod_{\heartsuit=0}^{20} \{a-b-2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a-b+2\diamond\} \right]} + \\
 & + \frac{2097152(-96782231616000a^{14} + 2570993384320a^{15} - 53512986240a^{16})}{\left[ \prod_{\heartsuit=0}^{20} \{a-b-2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a-b+2\diamond\} \right]} + \\
 & + \frac{2097152(853247136a^{17} - 10054800a^{18} + 82460a^{19} - 420a^{20} + a^{21})}{\left[ \prod_{\heartsuit=0}^{20} \{a-b-2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a-b+2\diamond\} \right]} + \\
 & + \frac{2097152(2551082656125828464640000b + 18034285618697563275264000a^2b)}{\left[ \prod_{\heartsuit=0}^{20} \{a-b-2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a-b+2\diamond\} \right]} + \\
 & + \frac{2097152(-5302160797104273044275200a^3b + 5607018417653412916101120a^4b)}{\left[ \prod_{\heartsuit=0}^{20} \{a-b-2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a-b+2\diamond\} \right]} + \\
 & + \frac{2097152(-932256615762419968376832a^5b + 363791583564959961055232a^6b)}{\left[ \prod_{\heartsuit=0}^{20} \{a-b-2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a-b+2\diamond\} \right]} +
 \end{aligned}$$

$$\begin{aligned}
 & + \frac{2097152(-37315288811906944204800a^7b + 7489957442085282054144a^8b)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(-498166507892515897344a^9b + 58633762795613451264a^{10}b)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(-2576442421949061120a^{11}b + 188756045605906688a^{12}b)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(-5435341998729216a^{13}b + 252735800846976a^{14}b - 4577441890560a^{15}b)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(133017777312a^{16}b - 1369444608a^{17}b + 23317028a^{18}b - 103320a^{19}b)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(861a^{20}b + 4589065620297665740800000b^2 + 18034285618697563275264000ab^2)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(15762845986109545324216320a^3b^2 - 1715582741848198927613952a^4b^2)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(1948319481506497921024000a^5b^2 - 158335044742339255074816a^6b^2)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(66037165498677645279232a^7b^2 - 3734163901229061500928a^8b^2)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(793246448982601729024a^9b^2 - 30755148197026885632a^{10}b^2)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(3789344928747961856a^{11}b^2 - 98535301715655168a^{12}b^2)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(7467613794096512a^{13}b^2 - 124108229323008a^{14}b^2 + 5886041837312a^{15}b^2)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(-56283597552a^{16}b^2 + 1635834564a^{17}b^2 - 6805344a^{18}b^2 + 111930a^{19}b^2)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} +
 \end{aligned}$$

$$\begin{aligned}
 & + \frac{2097152(3618572796858388709376000b^3 + 5302160797104273044275200ab^3)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(15762845986109545324216320a^2b^3 + 4279477751493666085797888a^4b^3)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(-223917316178353821843456a^5b^3 + 253642950373348367663104a^6b^3)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(-11470785823581796368384a^7b^3 + 4808408644935979539456a^8b^3)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(-161326575795225544704a^9b^3 + 34409466474637782528a^{10}b^3)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(-806178380777742336a^{11}b^3 + 99219476929326208a^{12}b^3)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(-1523034274347264a^{13}b^3 + 114316013559552a^{14}b^3 - 1027334730240a^{15}b^3)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(47621245308a^{16}b^3 - 188848296a^{17}b^3 + 5245786a^{18}b^3)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(1687018700164430403993600b^4 + 5607018417653412916101120ab^4)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(1715582741848198927613952a^2b^4 + 4279477751493666085797888a^3b^4)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(484737428561631998771200a^5b^4 - 13825835586638769168384a^6b^4)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(15120650790214317537280a^7b^4 - 404425418626749391872a^8b^4)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(165274807848601394944a^9b^4 - 3363994992766087680a^{10}b^4)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} +
 \end{aligned}$$

$$\begin{aligned}
 & + \frac{2097152(700557366559616384a^{11}b^4 - 9761204824320768a^{12}b^4)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(1169020433721728a^{13}b^4 - 9795900072000a^{14}b^4 + 709859761520a^{15}b^4)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(-2675350860a^{16}b^4 + 118030185a^{17}b^4 + 526766035608866113191936b^5)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(932256615762419968376832ab^5 + 1948319481506497921024000a^2b^5)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(223917316178353821843456a^3b^5 + 484737428561631998771200a^4b^5)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(26429876561704912930816a^6b^5 - 437825752904390602752a^7b^5)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(454688276882496873216a^8b^5 - 7331248218468894720a^9b^5)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(2870787673351678080a^{10}b^5 - 34723823234929920a^{11}b^5)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(6941613146622336a^{12}b^5 - 52920909565440a^{13}b^5 + 6064403010960a^{14}b^5)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(-21402806880a^{15}b^5 + 1471442973a^{16}b^5 + 117964128844107192729600b^6)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(363791583564959961055232ab^6 + 158335044742339255074816a^2b^6)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(253642950373348367663104a^3b^6 + 13825835586638769168384a^4b^6)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(26429876561704912930816a^5b^6 + 747218528298866111488a^7b^6)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} +
 \end{aligned}$$

$$\begin{aligned}
 & + \frac{2097152(-7351101916744954368a^8b^6 + 7182019754496915328a^9b^6)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(-68357994717492480a^{10}b^6 + 25373492966791424a^{11}b^6)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(-167526567988416a^{12}b^6 + 31784430433616a^{13}b^6 - 102074925120a^{14}b^6)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(11058116888a^{15}b^6 + 19769717617137637130240b^7)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(37315288811906944204800ab^7 + 66037165498677645279232a^2b^7)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(11470785823581796368384a^3b^7 + 15120650790214317537280a^4b^7)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(437825752904390602752a^5b^7 + 747218528298866111488a^6b^7)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(11286363877994105472a^8b^7 - 64752253797014784a^9b^7)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(59178785407822080a^{10}b^7 - 305570484570624a^{11}b^7 + 106731643248048a^{12}b^7)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(-296017282848a^{13}b^7 + 52860229080a^{14}b^7 + 2550445204778112122880b^8)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(7489957442085282054144ab^8 + 3734163901229061500928a^2b^8)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(4808408644935979539456a^3b^8 + 404425418626749391872a^4b^8)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(454688276882496873216a^5b^8 + 7351101916744954368a^6b^8)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} +
 \end{aligned}$$

$$\begin{aligned}
 & + \frac{2097152(11286363877994105472a^7b^8 + 89937442713134016a^9b^8)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(-277179402820320a^{10}b^8 + 236085009732936a^{11}b^8 - 509323854312a^{12}b^8)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(166509721602a^13b^8 + 258174206358711894016b^9)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(498166507892515897344ab^9 + 793246448982601729024a^2b^9)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(161326575795225544704a^3b^9 + 165274807848601394944a^4b^9)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(7331248218468894720a^5b^9 + 7182019754496915328a^6b^9)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(64752253797014784a^7b^9 + 89937442713134016a^8b^9 + 349750605804600a^{10}b^9)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(-446775310800a^{11}b^9 + 353697121050a^{12}b^9 + 20771430124567449600b^{10})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(58633762795613451264ab^{10} + 30755148197026885632a^2b^{10})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(34409466474637782528a^3b^{10} + 3363994992766087680a^4b^{10})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(2870787673351678080a^5b^{10} + 68357994717492480a^6b^{10})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(59178785407822080a^7b^{10} + 277179402820320a^8b^{10} + 349750605804600a^9b^{10})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(513791607420a^{11}b^{10} + 1338915850793364480b^{11} + 2576442421949061120ab^{11})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} +
 \end{aligned}$$



$$\begin{aligned}
 & + \frac{2097152(3789344928747961856a^2b^{11} + 806178380777742336a^3b^{11})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(700557366559616384a^4b^{11} + 34723823234929920a^5b^{11})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(25373492966791424a^6b^{11} + 305570484570624a^7b^{11} + 236085009732936a^8b^{11})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(446775310800a^9b^{11} + 513791607420a^{10}b^{11} + 69419613644559360b^{12})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(188756045605906688ab^{12} + 98535301715655168a^2b^{12})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(99219476929326208a^3b^{12} + 9761204824320768a^4b^{12})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(6941613146622336a^5b^{12} + 167526567988416a^6b^{12} + 106731643248048a^7b^{12})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(509323854312a^8b^{12} + 353697121050a^9b^{12} + 2895430910817536b^{13})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(5435341998729216ab^{13} + 7467613794096512a^2b^{13} + 1523034274347264a^3b^{13})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(1169020433721728a^4b^{13} + 52920909565440a^5b^{13} + 31784430433616a^6b^{13})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(296017282848a^7b^{13} + 166509721602a^8b^{13} + 96782231616000b^{14})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(252735800846976ab^{14} + 124108229323008a^2b^{14} + 114316013559552a^3b^{14})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(9795900072000a^4b^{14} + 6064403010960a^5b^{14} + 102074925120a^6b^{14})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} +
 \end{aligned}$$

$$\begin{aligned}
 & + \frac{2097152(52860229080a^7b^{14} + 2570993384320b^{15} + 4577441890560ab^{15})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(5886041837312a^2b^{15} + 1027334730240a^3b^{15} + 709859761520a^4b^{15})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(21402806880a^5b^{15} + 11058116888a^6b^{15} + 53512986240b^{16})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(133017777312ab^{16} + 56283597552a^2b^{16} + 47621245308a^3b^{16})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(2675350860a^4b^{16} + 1471442973a^5b^{16} + 853247136b^{17} + 1369444608ab^{17})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(1635834564a^2b^{17} + 188848296a^3b^{17} + 118030185a^4b^{17} + 10054800b^{18})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(23317028ab^{18} + 6805344a^2b^{18} + 5245786a^3b^{18} + 82460b^{19} + 103320ab^{19})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(111930a^2b^{19} + 420b^{20} + 861ab^{20} + b^{21})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304b(2551082656125828464640000 + 853045563776884015104000a)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(5046844677567391413043200a^2 + 908113612506970403635200a^3)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(943293793948861653319680a^4 + 104874749671411408699392a^5)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(43804563947434794549248a^6 + 3206657157123149004800a^7)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(695881739005324099584a^8 + 34502173340884414464a^9)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} +
 \end{aligned}$$



$$\begin{aligned}
 & + \frac{4194304b(4370328041608129536a^{10} + 147413395681244160a^{11})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(11519973780293888a^{12} + 259529058500096a^{13} + 12727480051584a^{14})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(182186263680a^{15} + 5499857952a^{16} + 44760048a^{17} + 771932a^{18} + 2660a^{19})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(4194304b(21a^{20} - 853045563776884015104000b))}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(11559169060421169158553600ab + 1142031698036946716590080a^2b)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(5423952157165206739353600a^3b + 483340488494855570325504a^4b)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(462098774179625173516288a^5b + 29739154860751054831616a^6b)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(11878368163696261726208a^7b + 540003762528448172032a^8b)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(113511250003086886912a^9b + 3598980835570312192a^{10}b)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(442655007120794624a^{11}b + 9538778579925504a^{12}b + 720991701034752a^{13}b)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(10015737262208a^{14}b + 470276092928a^{15}b + 3770546960a^{16}b)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(106810248a^{17}b + 370804a^{18}b + 5740a^{19}b + 5046844677567391413043200b^2)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(-1142031698036946716590080ab^2 + 9162138537143687568162816a^2b^2)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} +
 \end{aligned}$$

$$\begin{aligned}
 & + \frac{4194304b(397807783079586941632512a^3b^2 + 1606236897992772302405632a^4b^2)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(79985901310925941112832a^5b^2 + 70203458129013818785792a^6b^2)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(2770353357030304694272a^7b^2 + 1044011438827617827840a^8b^2)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(30238110324164627456a^9b^2 + 6058651455359726080a^{10}b^2)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(122806313632564224a^{11}b^2 + 14420734130391680a^{12}b^2)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(192246021387392a^{13}b^2 + 13807642532608a^{14}b^2 + 108000161152a^{15}b^2)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(4760540668a^{16}b^2 + 16405740a^{17}b^2 + 425334a^{18}b^2)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(-908113612506970403635200b^3 + 5423952157165206739353600ab^3)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(-397807783079586941632512a^2b^3 + 2387078061942597064065024a^3b^3)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(54165858339340169117696a^4b^3 + 191084514358987959304192a^5b^3)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(5685631363901324279808a^6b^3 + 4579807235019583217664a^7b^3)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(113820211057919015936a^8b^3 + 40163467045632939008a^9b^3)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(739982522866768896a^{10}b^3 + 139896504005293568a^{11}b^3)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} +
 \end{aligned}$$

$$\begin{aligned}
 & + \frac{4194304b(1751777944705152a^{12}b^3 + 194139922099200a^{13}b^3 + 1458526810240a^{14}b^3)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(98249075392a^{15}b^3 + 331233916a^{16}b^3 + 13489164a^{17}b^3)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(943293793948861653319680b^4 - 483340488494855570325504ab^4)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(1606236897992772302405632a^2b^4 - 54165858339340169117696a^3b^4)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(264441231300695277830144a^4b^4 + 3434524974756074594304a^5b^4)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(10753422354294917699584a^6b^4 + 197602360101547608064a^7b^4)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(146137881502128465664a^8b^4 + 2287582316724390400a^9b^4)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(752245508455199616a^{10}b^4 + 8519417326446208a^{11}b^4)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(1508934143912832a^{12}b^4 + 10625670431040a^{13}b^4 + 1101695764400a^{14}b^4)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(3567134480a^{15}b^4 + 222945905a^{16}b^4 - 104874749671411408699392b^5)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(462098774179625173516288ab^5 - 79985901310925941112832a^2b^5)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(191084514358987959304192a^3b^5 - 3434524974756074594304a^4b^5)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(14221909912110591029248a^5b^5 + 110718760473363474432a^6b^5)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} +
 \end{aligned}$$

$$\begin{aligned}
 & + \frac{4194304b(310775437793794541568a^7b^5 + 3542770042520636928a^8b^5)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(2406924367316781312a^9b^5 + 22967896652821120a^{10}b^5)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(7015062932620288a^{11}b^5 + 44474696966336a^{12}b^5 + 7339626148064a^{13}b^5)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(22225991760a^{14}b^5 + 2140280688a^{15}b^5 + 43804563947434794549248b^6)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(-29739154860751054831616ab^6 + 70203458129013818785792a^2b^6)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(-5685631363901324279808a^3b^6 + 10753422354294917699584a^4b^6)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(-110718760473363474432a^5b^6 + 398392850354233326592a^6b^6)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(1882596948467243008a^7b^6 + 4769925051865733760a^8b^6)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(32753273458249344a^9b^6 + 20451801353215232a^{10}b^6 + 108494163290240a^{11}b^6)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(30698633436016a^{12}b^6 + 83361188848a^{13}b^6 + 12759365640a^{14}b^6)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(-3206657157123149004800b^7 + 11878368163696261726208ab^7)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(-2770353357030304694272a^2b^7 + 4579807235019583217664a^3b^7)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(-197602360101547608064a^4b^7 + 310775437793794541568a^5b^7)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} +
 \end{aligned}$$



$$\begin{aligned}
 & + \frac{4194304b(-1882596948467243008a^6b^7 + 5978379300010996736a^7b^7)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(16738902516445824a^8b^7 + 38470291913923584a^9b^7 + 145457559854464a^{10}b^7)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(83501312754496a^{11}b^7 + 188638464560a^{12}b^7 + 49336213808a^{13}b^7)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(695881739005324099584b^8 - 540003762528448172032ab^8)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(1044011438827617827840a^2b^8 - 113820211057919015936a^3b^8)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(146137881502128465664a^4b^8 - 3542770042520636928a^5b^8)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(4769925051865733760a^6b^8 - 16738902516445824a^7b^8)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(47411663226003648a^8b^8 + 72173360207520a^9b^8 + 150988354535304a^{10}b^8)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(241258667832a^{11}b^8 + 127330963578a^{12}b^8 - 34502173340884414464b^9)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(113511250003086886912ab^9 - 30238110324164627456a^2b^9)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(40163467045632939008a^3b^9 - 2287582316724390400a^4b^9)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(2406924367316781312a^5b^9 - 32753273458249344a^6b^9)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(38470291913923584a^7b^9 - 72173360207520a^8b^9 + 183709752798000a^9b^9)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} +
 \end{aligned}$$

$$\begin{aligned}
 & + \frac{4194304b(117012581400a^{10}b^9 + 223387655400a^{11}b^9 + 4370328041608129536b^{10})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(-3598980835570312192ab^{10} + 6058651455359726080a^2b^{10})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(-739982522866768896a^3b^{10} + 752245508455199616a^4b^{10})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(-22967896652821120a^5b^{10} + 20451801353215232a^6b^{10})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(-145457559854464a^7b^{10} + 150988354535304a^8b^{10} - 117012581400a^9b^{10})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(269128937220a^{10}b^{10} - 147413395681244160b^{11} + 442655007120794624ab^{11})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(-122806313632564224a^2b^{11} + 139896504005293568a^3b^{11})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(-8519417326446208a^4b^{11} + 7015062932620288a^5b^{11})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(-108494163290240a^6b^{11} + 83501312754496a^7b^{11} - 241258667832a^8b^{11})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(223387655400a^9b^{11} + 11519973780293888b^{12} - 9538778579925504ab^{12})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(14420734130391680a^2b^{12} - 1751777944705152a^3b^{12})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(1508934143912832a^4b^{12} - 44474696966336a^5b^{12} + 30698633436016a^6b^{12})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(-188638464560a^7b^{12} + 127330963578a^8b^{12} - 259529058500096b^{13})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} +
 \end{aligned}$$





$$\begin{aligned}
 & + \frac{4194304b(720991701034752ab^{13} - 192246021387392a^2b^{13} + 194139922099200a^3b^{13})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(-10625670431040a^4b^{13} + 7339626148064a^5b^{13} - 83361188848a^6b^{13})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(49336213808a^7b^{13} + 12727480051584b^{14} - 10015737262208ab^{14})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(13807642532608a^2b^{14} - 1458526810240a^3b^{14} + 1101695764400a^4b^{14})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(-22225991760a^5b^{14} + 12759365640a^6b^{14} - 182186263680b^{15})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(470276092928ab^{15} - 108000161152a^2b^{15} + 98249075392a^3b^{15})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(-3567134480a^4b^{15} + 2140280688a^5b^{15} + 5499857952b^{16} - 3770546960ab^{16})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(4760540668a^2b^{16} - 331233916a^3b^{16} + 222945905a^4b^{16} - 44760048b^{17})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(106810248ab^{17} - 16405740a^2b^{17} + 13489164a^3b^{17} + 771932b^{18})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{4194304b(-370804ab^{18} + 425334a^2b^{18} - 2660b^{19} + 5740ab^{19} + 21b^{20})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} \Bigg\} - \\
 & - \frac{\Gamma(\frac{b+1}{2})}{\Gamma(\frac{a+1}{2})} \left\{ \frac{4194304a(2551082656125828464640000 - 853045563776884015104000a)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamondsuit=1}^{21} \{a - b + 2\diamondsuit\} \right]} + \right. \\
 & + \frac{4194304a(5046844677567391413043200a^2 - 908113612506970403635200a^3)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamondsuit=1}^{21} \{a - b + 2\diamondsuit\} \right]} + \\
 & \left. + \frac{4194304a(943293793948861653319680a^4 - 104874749671411408699392a^5)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamondsuit=1}^{21} \{a - b + 2\diamondsuit\} \right]} + \right.
 \end{aligned}$$

$$\begin{aligned}
 & + \frac{4194304a(43804563947434794549248a^6 - 3206657157123149004800a^7)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(695881739005324099584a^8 - 34502173340884414464a^9)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(4370328041608129536a^{10} - 147413395681244160a^{11})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(11519973780293888a^{12} - 259529058500096a^{13} + 12727480051584a^{14})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(-182186263680a^{15} + 5499857952a^{16} - 44760048a^{17} + 771932a^{18} - 2660a^{19})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(21a^{20} + 853045563776884015104000b + 11559169060421169158553600ab)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(-1142031698036946716590080a^2b + 5423952157165206739353600a^3b)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(-483340488494855570325504a^4b + 462098774179625173516288a^5b)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(-29739154860751054831616a^6b + 11878368163696261726208a^7b)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(-540003762528448172032a^8b + 113511250003086886912a^9b)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(-3598980835570312192a^{10}b + 442655007120794624a^{11}b)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(-9538778579925504a^{12}b + 720991701034752a^{13}b - 10015737262208a^{14}b)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(470276092928a^{15}b - 3770546960a^{16}b + 106810248a^{17}b - 370804a^{18}b)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} +
 \end{aligned}$$



$$\begin{aligned}
 & + \frac{4194304a(5740a^{19}b + 5046844677567391413043200b^2)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(1142031698036946716590080ab^2 + 9162138537143687568162816a^2b^2)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(-397807783079586941632512a^3b^2 + 1606236897992772302405632a^4b^2)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(-79985901310925941112832a^5b^2 + 70203458129013818785792a^6b^2)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(-2770353357030304694272a^7b^2 + 1044011438827617827840a^8b^2)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(-30238110324164627456a^9b^2 + 6058651455359726080a^{10}b^2)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(-122806313632564224a^{11}b^2 + 14420734130391680a^{12}b^2)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(-192246021387392a^{13}b^2 + 13807642532608a^{14}b^2 - 108000161152a^{15}b^2)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(4760540668a^{16}b^2 - 16405740a^{17}b^2 + 425334a^{18}b^2)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(908113612506970403635200b^3 + 5423952157165206739353600ab^3)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(397807783079586941632512a^2b^3 + 2387078061942597064065024a^3b^3)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(-54165858339340169117696a^4b^3 + 191084514358987959304192a^5b^3)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(-5685631363901324279808a^6b^3 + 4579807235019583217664a^7b^3)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} +
 \end{aligned}$$

$$\begin{aligned}
 & + \frac{4194304a(-113820211057919015936a^8b^3 + 40163467045632939008a^9b^3)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(-739982522866768896a^{10}b^3 + 139896504005293568a^{11}b^3)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(-1751777944705152a^{12}b^3 + 194139922099200a^{13}b^3 - 1458526810240a^{14}b^3)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(98249075392a^{15}b^3 - 331233916a^{16}b^3 + 13489164a^{17}b^3)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(943293793948861653319680b^4 + 483340488494855570325504ab^4)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(1606236897992772302405632a^2b^4 + 54165858339340169117696a^3b^4)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(264441231300695277830144a^4b^4 - 3434524974756074594304a^5b^4)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(10753422354294917699584a^6b^4 - 197602360101547608064a^7b^4)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(146137881502128465664a^8b^4 - 2287582316724390400a^9b^4)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(752245508455199616a^{10}b^4 - 8519417326446208a^{11}b^4)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(1508934143912832a^{12}b^4 - 10625670431040a^{13}b^4 + 1101695764400a^{14}b^4)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(-3567134480a^{15}b^4 + 222945905a^{16}b^4 + 104874749671411408699392b^5)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(462098774179625173516288ab^5 + 79985901310925941112832a^2b^5)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} +
 \end{aligned}$$



$$\begin{aligned}
 & + \frac{4194304a(191084514358987959304192a^3b^5 + 3434524974756074594304a^4b^5)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(142219099121110591029248a^5b^5 - 110718760473363474432a^6b^5)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(310775437793794541568a^7b^5 - 3542770042520636928a^8b^5)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(2406924367316781312a^9b^5 - 22967896652821120a^{10}b^5)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(7015062932620288a^{11}b^5 - 44474696966336a^{12}b^5 + 7339626148064a^{13}b^5)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(-22225991760a^{14}b^5 + 2140280688a^{15}b^5 + 43804563947434794549248b^6)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(29739154860751054831616ab^6 + 70203458129013818785792a^2b^6)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(5685631363901324279808a^3b^6 + 10753422354294917699584a^4b^6)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(110718760473363474432a^5b^6 + 398392850354233326592a^6b^6)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(-1882596948467243008a^7b^6 + 4769925051865733760a^8b^6)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(-32753273458249344a^9b^6 + 20451801353215232a^{10}b^6)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(-108494163290240a^{11}b^6 + 30698633436016a^{12}b^6 - 83361188848a^{13}b^6)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(12759365640a^{14}b^6 + 3206657157123149004800b^7)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} +
 \end{aligned}$$

$$\begin{aligned}
 & + \frac{4194304a(11878368163696261726208ab^7 + 2770353357030304694272a^2b^7)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(4579807235019583217664a^3b^7 + 197602360101547608064a^4b^7)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(310775437793794541568a^5b^7 + 1882596948467243008a^6b^7)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(5978379300010996736a^7b^7 - 16738902516445824a^8b^7)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(38470291913923584a^9b^7 - 145457559854464a^{10}b^7 + 83501312754496a^{11}b^7)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(-188638464560a^{12}b^7 + 49336213808a^{13}b^7 + 695881739005324099584b^8)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(540003762528448172032ab^8 + 1044011438827617827840a^2b^8)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(113820211057919015936a^3b^8 + 146137881502128465664a^4b^8)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(3542770042520636928a^5b^8 + 4769925051865733760a^6b^8)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(16738902516445824a^7b^8 + 47411663226003648a^8b^8 - 72173360207520a^9b^8)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(150988354535304a^{10}b^8 - 241258667832a^{11}b^8 + 127330963578a^{12}b^8)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(34502173340884414464b^9 + 113511250003086886912ab^9)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(30238110324164627456a^2b^9 + 40163467045632939008a^3b^9)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} +
 \end{aligned}$$



$$\begin{aligned}
 & + \frac{4194304a(2287582316724390400a^4b^9 + 2406924367316781312a^5b^9)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(32753273458249344a^6b^9 + 38470291913923584a^7b^9 + 72173360207520a^8b^9)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(183709752798000a^9b^9 - 117012581400a^{10}b^9 + 223387655400a^{11}b^9)}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(4370328041608129536b^{10} + 3598980835570312192ab^{10})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(6058651455359726080a^2b^{10} + 739982522866768896a^3b^{10})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(752245508455199616a^4b^{10} + 22967896652821120a^5b^{10})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(20451801353215232a^6b^{10} + 145457559854464a^7b^{10} + 150988354535304a^8b^{10})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(117012581400a^9b^{10} + 269128937220a^{10}b^{10} + 147413395681244160b^{11})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(442655007120794624ab^{11} + 122806313632564224a^2b^{11})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(139896504005293568a^3b^{11} + 8519417326446208a^4b^{11})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(7015062932620288a^5b^{11} + 108494163290240a^6b^{11} + 83501312754496a^7b^{11})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(241258667832a^8b^{11} + 223387655400a^9b^{11} + 11519973780293888b^{12})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(9538778579925504ab^{12} + 14420734130391680a^2b^{12})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} +
 \end{aligned}$$

$$\begin{aligned}
 & + \frac{4194304a(1751777944705152a^3b^{12} + 1508934143912832a^4b^{12} + 44474696966336a^5b^{12})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(30698633436016a^6b^{12} + 188638464560a^7b^{12} + 127330963578a^8b^{12})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(259529058500096b^{13} + 720991701034752ab^{13} + 192246021387392a^2b^{13})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(194139922099200a^3b^{13} + 10625670431040a^4b^{13} + 7339626148064a^5b^{13})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(83361188848a^6b^{13} + 49336213808a^7b^{13} + 12727480051584b^{14})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(10015737262208ab^{14} + 13807642532608a^2b^{14} + 1458526810240a^3b^{14})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(1101695764400a^4b^{14} + 22225991760a^5b^{14} + 12759365640a^6b^{14})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(182186263680b^{15} + 470276092928ab^{15} + 108000161152a^2b^{15})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(98249075392a^3b^{15} + 3567134480a^4b^{15} + 2140280688a^5b^{15} + 5499857952b^{16})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(3770546960ab^{16} + 4760540668a^2b^{16} + 331233916a^3b^{16} + 222945905a^4b^{16})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(44760048b^{17} + 106810248ab^{17} + 16405740a^2b^{17} + 13489164a^3b^{17})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{4194304a(771932b^{18} + 370804ab^{18} + 425334a^2b^{18} + 2660b^{19} + 5740ab^{19} + 21b^{20})}{\left[ \prod_{\heartsuit=0}^{20} \{a - b - 2\heartsuit\} \right] \left[ \prod_{\diamond=1}^{21} \{a - b + 2\diamond\} \right]} + \\
 & + \frac{2097152(2551082656125828464640000a + 4589065620297665740800000a^2)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} +
 \end{aligned}$$





$$\begin{aligned}
 & + \frac{2097152(3618572796858388709376000a^3 + 1687018700164430403993600a^4)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(526766035608866113191936a^5 + 117964128844107192729600a^6)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(19769717617137637130240a^7 + 2550445204778112122880a^8)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(258174206358711894016a^9 + 20771430124567449600a^{10})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(1338915850793364480a^{11} + 69419613644559360a^{12} + 2895430910817536a^{13})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(96782231616000a^{14} + 2570993384320a^{15} + 53512986240a^{16} + 853247136a^{17})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(10054800a^{18} + 82460a^{19} + 420a^{20} + a^{21} + 2551082656125828464640000b)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(18034285618697563275264000a^2b + 5302160797104273044275200a^3b)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(5607018417653412916101120a^4b + 932256615762419968376832a^5b)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(363791583564959961055232a^6b + 37315288811906944204800a^7b)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(7489957442085282054144a^8b + 498166507892515897344a^9b)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(58633762795613451264a^{10}b + 2576442421949061120a^{11}b)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(188756045605906688a^{12}b + 5435341998729216a^{13}b + 252735800846976a^{14}b)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} +
 \end{aligned}$$

$$\begin{aligned}
 & + \frac{2097152(4577441890560a^{15}b + 133017777312a^{16}b + 1369444608a^{17}b + 23317028a^{18}b)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & \quad + \frac{2097152(103320a^{19}b + 861a^{20}b - 4589065620297665740800000b^2)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & \quad + \frac{2097152(18034285618697563275264000ab^2 + 15762845986109545324216320a^3b^2)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & \quad + \frac{2097152(1715582741848198927613952a^4b^2 + 1948319481506497921024000a^5b^2)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & \quad + \frac{2097152(158335044742339255074816a^6b^2 + 66037165498677645279232a^7b^2)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & \quad + \frac{2097152(3734163901229061500928a^8b^2 + 793246448982601729024a^9b^2)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & \quad + \frac{2097152(30755148197026885632a^{10}b^2 + 3789344928747961856a^{11}b^2)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & \quad + \frac{2097152(98535301715655168a^{12}b^2 + 7467613794096512a^{13}b^2 + 124108229323008a^{14}b^2)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & \quad + \frac{2097152(5886041837312a^{15}b^2 + 56283597552a^{16}b^2 + 1635834564a^{17}b^2 + 6805344a^{18}b^2)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & \quad + \frac{2097152(111930a^{19}b^2 + 3618572796858388709376000b^3)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & \quad + \frac{2097152(-5302160797104273044275200ab^3 + 15762845986109545324216320a^2b^3)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & \quad + \frac{2097152(4279477751493666085797888a^4b^3 + 223917316178353821843456a^5b^3)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & \quad + \frac{2097152(253642950373348367663104a^6b^3 + 11470785823581796368384a^7b^3)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} +
 \end{aligned}$$



$$\begin{aligned}
 & + \frac{2097152(4808408644935979539456a^8b^3 + 161326575795225544704a^9b^3)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(34409466474637782528a^{10}b^3 + 806178380777742336a^{11}b^3)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(99219476929326208a^{12}b^3 + 1523034274347264a^{13}b^3 + 114316013559552a^{14}b^3)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(1027334730240a^{15}b^3 + 47621245308a^{16}b^3 + 188848296a^{17}b^3 + 5245786a^{18}b^3)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(-1687018700164430403993600b^4 + 5607018417653412916101120ab^4)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(-1715582741848198927613952a^2b^4 + 4279477751493666085797888a^3b^4)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(484737428561631998771200a^5b^4 + 13825835586638769168384a^6b^4)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(15120650790214317537280a^7b^4 + 404425418626749391872a^8b^4)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(165274807848601394944a^9b^4 + 3363994992766087680a^{10}b^4)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(700557366559616384a^{11}b^4 + 9761204824320768a^{12}b^4)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(1169020433721728a^{13}b^4 + 9795900072000a^{14}b^4 + 709859761520a^{15}b^4)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(2675350860a^{16}b^4 + 118030185a^{17}b^5 + 26766035608866113191936b^5)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(-932256615762419968376832ab^5 + 1948319481506497921024000a^2b^5)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} +
 \end{aligned}$$

$$\begin{aligned}
 & + \frac{2097152(-223917316178353821843456a^3b^5 + 484737428561631998771200a^4b^5)}{\left[ \prod_{\clubsuit=0}^{21} \{a-b-2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a-b+2\spadesuit\} \right]} + \\
 & + \frac{2097152(26429876561704912930816a^6b^5 + 437825752904390602752a^7b^5)}{\left[ \prod_{\clubsuit=0}^{21} \{a-b-2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a-b+2\spadesuit\} \right]} + \\
 & + \frac{2097152(454688276882496873216a^8b^5 + 7331248218468894720a^9b^5)}{\left[ \prod_{\clubsuit=0}^{21} \{a-b-2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a-b+2\spadesuit\} \right]} + \\
 & + \frac{2097152(2870787673351678080a^{10}b^5 + 34723823234929920a^{11}b^5)}{\left[ \prod_{\clubsuit=0}^{21} \{a-b-2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a-b+2\spadesuit\} \right]} + \\
 & + \frac{2097152(6941613146622336a^{12}b^5 + 52920909565440a^{13}b^5 + 6064403010960a^{14}b^5)}{\left[ \prod_{\clubsuit=0}^{21} \{a-b-2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a-b+2\spadesuit\} \right]} + \\
 & + \frac{2097152(21402806880a^{15}b^5 + 1471442973a^{16}b^5 - 117964128844107192729600b^6)}{\left[ \prod_{\clubsuit=0}^{21} \{a-b-2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a-b+2\spadesuit\} \right]} + \\
 & + \frac{2097152(363791583564959961055232ab^6 - 158335044742339255074816a^2b^6)}{\left[ \prod_{\clubsuit=0}^{21} \{a-b-2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a-b+2\spadesuit\} \right]} + \\
 & + \frac{2097152(253642950373348367663104a^3b^6 - 13825835586638769168384a^4b^6)}{\left[ \prod_{\clubsuit=0}^{21} \{a-b-2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a-b+2\spadesuit\} \right]} + \\
 & + \frac{2097152(26429876561704912930816a^5b^6 + 747218528298866111488a^7b^6)}{\left[ \prod_{\clubsuit=0}^{21} \{a-b-2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a-b+2\spadesuit\} \right]} + \\
 & + \frac{2097152(7351101916744954368a^8b^6 + 7182019754496915328a^9b^6)}{\left[ \prod_{\clubsuit=0}^{21} \{a-b-2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a-b+2\spadesuit\} \right]} + \\
 & + \frac{2097152(68357994717492480a^{10}b^6 + 25373492966791424a^{11}b^6)}{\left[ \prod_{\clubsuit=0}^{21} \{a-b-2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a-b+2\spadesuit\} \right]} + \\
 & + \frac{2097152(167526567988416a^{12}b^6 + 31784430433616a^{13}b^6 + 102074925120a^{14}b^6)}{\left[ \prod_{\clubsuit=0}^{21} \{a-b-2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a-b+2\spadesuit\} \right]} + \\
 & + \frac{2097152(11058116888a^{15}b^6 + 19769717617137637130240b^7)}{\left[ \prod_{\clubsuit=0}^{21} \{a-b-2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a-b+2\spadesuit\} \right]} +
 \end{aligned}$$



$$\begin{aligned}
 & + \frac{2097152(-37315288811906944204800ab^7 + 66037165498677645279232a^2b^7)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(-11470785823581796368384a^3b^7 + 15120650790214317537280a^4b^7)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(-437825752904390602752a^5b^7 + 747218528298866111488a^6b^7)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(11286363877994105472a^8b^7 + 64752253797014784a^9b^7)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(59178785407822080a^{10}b^7 + 305570484570624a^{11}b^7 + 106731643248048a^{12}b^7)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(296017282848a^{13}b^7 + 52860229080a^{14}b^7 - 2550445204778112122880b^8)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(7489957442085282054144ab^8 - 3734163901229061500928a^2b^8)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(4808408644935979539456a^3b^8 - 404425418626749391872a^4b^8)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(454688276882496873216a^5b^8 - 7351101916744954368a^6b^8)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(11286363877994105472a^7b^8 + 89937442713134016a^9b^8)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(277179402820320a^{10}b^8 + 236085009732936a^{11}b^8 + 509323854312a^{12}b^8)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(166509721602a^{13}b^8 + 258174206358711894016b^9 - 498166507892515897344ab^9)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(793246448982601729024a^2b^9 - 161326575795225544704a^3b^9)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} +
 \end{aligned}$$

$$\begin{aligned}
 & + \frac{2097152(165274807848601394944a^4b^9 - 7331248218468894720a^5b^9)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(7182019754496915328a^6b^9 - 64752253797014784a^7b^9)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(89937442713134016a^8b^9 + 349750605804600a^{10}b^9 + 446775310800a^{11}b^9)}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(353697121050a^{12}b^9 - 20771430124567449600b^{10} + 58633762795613451264ab^{10})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(-30755148197026885632a^2b^{10} + 34409466474637782528a^3b^{10})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(-3363994992766087680a^4b^{10} + 2870787673351678080a^5b^{10})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(-68357994717492480a^6b^{10} + 59178785407822080a^7b^{10})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(-277179402820320a^8b^{10} + 349750605804600a^9b^{10} + 513791607420a^{11}b^{10})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(1338915850793364480b^{11} - 2576442421949061120ab^{11})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(3789344928747961856a^2b^{11} - 80617838077742336a^3b^{11})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(700557366559616384a^4b^{11} - 34723823234929920a^5b^{11})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(25373492966791424a^6b^{11} - 305570484570624a^7b^{11} + 236085009732936a^8b^{11})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(-446775310800a^9b^{11} + 513791607420a^{10}b^{11} - 69419613644559360b^{12})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} +
 \end{aligned}$$



$$\begin{aligned}
 & + \frac{2097152(188756045605906688ab^{12} - 98535301715655168a^2b^{12})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(99219476929326208a^3b^{12} - 9761204824320768a^4b^{12})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(6941613146622336a^5b^{12} - 167526567988416a^6b^{12} + 106731643248048a^7b^{12})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(-509323854312a^8b^{12} + 353697121050a^9b^{12} + 2895430910817536b^{13})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(-5435341998729216ab^{13} + 7467613794096512a^2b^{13} - 1523034274347264a^3b^{13})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(1169020433721728a^4b^{13} - 52920909565440a^5b^{13} + 31784430433616a^6b^{13})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(-296017282848a^7b^{13} + 166509721602a^8b^{13} - 96782231616000b^{14})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(252735800846976ab^{14} - 124108229323008a^2b^{14} + 11431601359552a^3b^{14})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(-9795900072000a^4b^{14} + 6064403010960a^5b^{14} - 102074925120a^6b^{14})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(52860229080a^7b^{14} + 2570993384320b^{15} - 4577441890560ab^{15})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(5886041837312a^2b^{15} - 1027334730240a^3b^{15} + 709859761520a^4b^{15})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(-21402806880a^5b^{15} + 11058116888a^6b^{15} - 53512986240b^{16})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(133017777312ab^{16} - 56283597552a^2b^{16} + 47621245308a^3b^{16})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} +
 \end{aligned}$$

$$\begin{aligned}
 & + \frac{2097152(-2675350860a^4b^{16} + 1471442973a^5b^{16} + 853247136b^{17} - 1369444608ab^{17})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(1635834564a^2b^{17} - 188848296a^3b^{17} + 118030185a^4b^{17} - 10054800b^{18})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \frac{2097152(23317028ab^{18} - 6805344a^2b^{18} + 5245786a^3b^{18} + 82460b^{19} - 103320ab^{19})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} + \\
 & + \left. \frac{2097152(111930a^2b^{19} - 420b^{20} + 861ab^{20} + b^{21})}{\left[ \prod_{\clubsuit=0}^{21} \{a - b - 2\clubsuit\} \right] \left[ \prod_{\spadesuit=1}^{20} \{a - b + 2\spadesuit\} \right]} \right\} \quad (8)
 \end{aligned}$$

### III. DERIVATION OF THE SUMMATION FORMULA

Using the same parallel method of Ref.[5],we obtain the main result.

### IV. OPEN PROBLEM

The result established in this paper having number of terms. It is open problem to all researchers working in mathematics as well as computer science to suggest an technique to reduce the number of terms or provide its general result which is yet to be discovered.

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