

$$\begin{aligned}
& \frac{[12]\langle 4|1+2|3\rangle\langle 6|1+2|5\rangle(1/12\langle 2|1-3|4\rangle(s_{234}-s_{134})+1/6\langle 2|3+4|1\rangle\langle 1|2-3|4\rangle)}{(12)\langle 2|3+4|1\rangle\langle 3|1+2|4\rangle\Delta_{12|34|56}} + \\
& \frac{-12[12]^2\langle 24\rangle^2[25]\langle 26\rangle\langle 1|3+4|2\rangle}{\langle 23\rangle\langle 34\rangle\langle 2|5+6|2\rangle^3} + \\
& \frac{3[12]\langle 24\rangle^2[25]^2\langle 1|5+6|1\rangle^2}{\langle 23\rangle\langle 34\rangle[56]\langle 2|5+6|2\rangle^3} + \\
& \frac{-12\langle 34\rangle^3[34]^2[35]^2\langle 56\rangle}{(12)\langle 23\rangle\langle 3|5+6|3\rangle^3} + \\
& \frac{3\langle 34\rangle^2[34][35]^2\langle 4|5+6|4\rangle^2}{(12)\langle 23\rangle[56]\langle 3|5+6|3\rangle^3} + \\
& \frac{[45]\langle 36\rangle(s_{123}-s_{124})(-2/3\langle 24\rangle[24]\dots\langle 4\text{ terms}\rangle\dots+1/6(12)\langle 12\rangle)}{(12)\langle 23\rangle\langle 3|1+2|4\rangle^2} + \\
& \frac{\langle 34\rangle[45]^2(s_{123}-s_{124})(4/3\langle 34\rangle[34]+2/3\langle 24\rangle[24]+2/3\langle 14\rangle[14])}{(12)\langle 23\rangle[56]\langle 3|1+2|4\rangle^2} + \\
& \frac{-1/2\langle 34\rangle^2[34][45]^2(s_{12}-s_{34})(s_{123}-s_{124})}{(12)\langle 23\rangle[56]\langle 3|5+6|3\rangle\langle 3|1+2|4\rangle^2} + \\
& \frac{2[12][15]\langle 24\rangle^2\langle 2|1+6|5\rangle\Delta_{12|34|56}}{(12)\langle 23\rangle\langle 34\rangle[56]\langle 2|3+4|1\rangle^2\langle 2|5+6|2\rangle} + \\
& \frac{-1/6[15]\langle 24\rangle^2\langle 6|2+5|1\rangle(s_{234}-s_{134})}{(12)\langle 23\rangle\langle 34\rangle\langle 2|3+4|1\rangle^2} + \\
& \frac{1/3[12][15]\langle 24\rangle^2\langle 26\rangle\langle 2|3+4|2\rangle(s_{234}-s_{134})}{(12)\langle 23\rangle\langle 34\rangle\langle 2|3+4|1\rangle^2\langle 2|5+6|2\rangle} + \\
& \frac{\langle 24\rangle(1(12)[13][24][25]\langle 34\rangle\langle 46\rangle\dots\langle 40\text{ terms}\rangle\dots+2[23]\langle 34\rangle^2[34][45]\langle 46\rangle)}{(12)\langle 23\rangle\langle 34\rangle\langle 2|5+6|2\rangle^2} + \\
& \frac{[23]\langle 26\rangle\langle 24\rangle(2(12)[12]^2\langle 14\rangle\langle 36\rangle\dots\langle 3\text{ terms}\rangle\dots-1/2[23]\langle 34\rangle^2[34]\langle 36\rangle)}{(12)\langle 23\rangle\langle 34\rangle[56]\langle 2|5+6|2\rangle^2} + \\
& \frac{[25]\langle 24\rangle(-6(13)[13]\langle 14\rangle[14]\langle 34\rangle[35]\dots\langle 14\text{ terms}\rangle\dots+1(12)[12]\langle 34\rangle^2[34][35])}{(12)\langle 23\rangle\langle 34\rangle[56]\langle 2|5+6|2\rangle^2} + \\
& \frac{[13]\langle 24\rangle[24](1(13)[13]\langle 23\rangle\langle 24\rangle[25]\langle 46\rangle\dots\langle 6\text{ terms}\rangle\dots-3/2[23]\langle 24\rangle^2\langle 34\rangle\langle 36\rangle[45])}{(12)\langle 23\rangle\langle 34\rangle\langle 2|3+4|1\rangle\langle 2|5+6|2\rangle^2} + \\
& \frac{\langle 26\rangle\langle 24\rangle(2[12]\langle 23\rangle[23]\langle 34\rangle^2[34]^2\langle 46\rangle\dots\langle 11\text{ terms}\rangle\dots+3/2[12]\langle 23\rangle[23]^2\langle 24\rangle^2[24]\langle 36\rangle)}{(12)\langle 23\rangle\langle 34\rangle\langle 56\rangle\langle 2|3+4|1\rangle\langle 2|5+6|2\rangle^2} + \\
& \frac{[12][15][25]\langle 24\rangle^2\langle 3/2\langle 34\rangle^2[34]^2\dots\langle 4\text{ terms}\rangle\dots+3/2\langle 23\rangle[23]\langle 24\rangle[24])}{\langle 23\rangle\langle 34\rangle[56]\langle 2|3+4|1\rangle\langle 2|5+6|2\rangle^2} + \\
& \frac{-11/2(12)^2[13][24]^2\langle 34\rangle^2[35]\langle 36\rangle\dots\langle 71\text{ terms}\rangle\dots+4(12)\langle 23\rangle\langle 24\rangle[24]^3\langle 34\rangle[35]\langle 46\rangle}{(12)\langle 13\rangle\langle 23\rangle\langle 3|5+6|3\rangle^2\langle 3|1+2|4\rangle} + \\
& \frac{\langle 34\rangle^2[34][35][45]\langle 3/2(13)^2[13]^2\dots\langle 3\text{ terms}\rangle\dots+3(13)[13]\langle 23\rangle[23])}{(12)\langle 23\rangle[56]\langle 3|5+6|3\rangle^2\langle 3|1+2|4\rangle} + \\
& \frac{\langle 34\rangle[34]^2\langle 36\rangle\langle 46\rangle\langle 4|5+6|4\rangle(-2(12)[24]\langle 34\rangle-5/2(12)[12]\langle 13\rangle+1/2(13)\langle 34\rangle[34])}{(12)\langle 13\rangle\langle 23\rangle\langle 56\rangle\langle 3|5+6|3\rangle^2\langle 3|1+2|4\rangle} + \\
& \frac{[12]\langle 6|1+2|5\rangle(1/3\langle 24\rangle[34]-1/3(12)[13])}{(12)\langle 2|3+4|1\rangle\langle 3|1+2|4\rangle} + \\
& \frac{\langle 14\rangle(-1/2(14)[14]\langle 16\rangle[25]\dots\langle 3\text{ terms}\rangle\dots-1/2(12)[24][25]\langle 46\rangle)}{(12)\langle 13\rangle\langle 23\rangle\langle 1|3+4|2\rangle} + \\
& \frac{1/2(12)[23][25]^2\langle 34\rangle}{\langle 13\rangle\langle 23\rangle[56]\langle 1|3+4|2\rangle} + \\
& \frac{-1/2[12]\langle 14\rangle\langle 16\rangle[23]\langle 36\rangle}{\langle 13\rangle\langle 23\rangle\langle 56\rangle\langle 1|3+4|2\rangle} + \\
& \frac{[12]\langle 14\rangle(1(12)[12]\langle 13\rangle\langle 16\rangle[35]\dots\langle 5\text{ terms}\rangle\dots-1/2(13)\langle 14\rangle[24]\langle 26\rangle[35])}{(12)\langle 13\rangle\langle 23\rangle\langle 1|3+4|2\rangle\langle 2|5+6|2\rangle} + \\
& \frac{\langle 16\rangle\langle 24\rangle\langle 14\rangle\langle 6|1+5|2\rangle[24](1/2(13)[13]+1/2(14)[14]-1/2(23)[23]-1/2(24)[24])}{(12)\langle 13\rangle\langle 23\rangle\langle 56\rangle\langle 1|3+4|2\rangle\langle 2|5+6|2\rangle} + \\
& \frac{\langle 14\rangle[35]\langle 1|23\rangle\langle 36\rangle-1[24]\langle 46\rangle}{\langle 13\rangle\langle 23\rangle\langle 1|2+4|3\rangle} + \\
& \frac{\langle 16\rangle(-3[23]^2\langle 24\rangle\langle 36\rangle+1[12]\langle 14\rangle[34]\langle 46\rangle)}{\langle 13\rangle\langle 23\rangle\langle 56\rangle\langle 1|2+4|3\rangle} + \\
& \frac{-1(12)[23][25]\langle 34\rangle[35]}{\langle 13\rangle\langle 23\rangle[56]\langle 1|2+4|3\rangle} + \\
& \frac{\langle 14\rangle\langle 36\rangle[35][23]\langle 1(14)[14]+3(23)[23]+1(24)[24])}{\langle 13\rangle\langle 23\rangle\langle 1|2+4|3\rangle\langle 3|5+6|3\rangle} + \\
& \frac{-1(16)[23]\langle 46\rangle\langle 3|1+2|3\rangle^2}{\langle 13\rangle\langle 23\rangle\langle 56\rangle\langle 1|2+4|3\rangle\langle 3|5+6|3\rangle} + \\
& \frac{1(12)[12]\langle 16\rangle[23]\langle 34\rangle[34]\langle 46\rangle}{\langle 13\rangle\langle 23\rangle\langle 56\rangle\langle 1|2+4|3\rangle\langle 3|5+6|3\rangle} + \\
& \frac{1(14)\langle 34\rangle[34][35][45]\langle 4|1+3|2\rangle}{\langle 13\rangle\langle 23\rangle[56]\langle 1|2+4|3\rangle\langle 3|5+6|3\rangle} + \\
& \frac{-109/3(13)\langle 14\rangle^2[14]^2[15]\langle 24\rangle\langle 46\rangle\dots\langle 104\text{ terms}\rangle\dots-2(13)[13]^2\langle 14\rangle\langle 24\rangle\langle 34\rangle\langle 36\rangle[45]}{(12)\langle 13\rangle\langle 23\rangle\langle 34\rangle\langle 2|3+4|1\rangle\langle 2|5+6|2\rangle} + \\
& \frac{\langle 36\rangle(13(13)^2[13]^3\langle 14\rangle\langle 24\rangle\langle 36\rangle\dots\langle 24\text{ terms}\rangle\dots+1/2[23]\langle 24\rangle^2\langle 34\rangle^2[34]^2\langle 36\rangle)}{(12)\langle 13\rangle\langle 23\rangle\langle 34\rangle\langle 56\rangle\langle 2|3+4|1\rangle\langle 2|5+6|2\rangle} + \\
& \frac{\langle 46\rangle(-2(12)^2[12]^2\langle 23\rangle^2[23]\langle 46\rangle\dots\langle 6\text{ terms}\rangle\dots+1(13)^3[13]^2[14]\langle 24\rangle\langle 46\rangle)}{(12)\langle 13\rangle\langle 23\rangle\langle 34\rangle\langle 56\rangle\langle 2|3+4|1\rangle\langle 2|5+6|2\rangle} + \\
& \frac{[45](-71/2(12)[13]\langle 14\rangle^2[14][15]\langle 34\rangle^2\dots\langle 21\text{ terms}\rangle\dots+7/3(23)[23]\langle 24\rangle\langle 34\rangle^3[34][35])}{(12)\langle 13\rangle\langle 23\rangle\langle 34\rangle[56]\langle 2|3+4|1\rangle\langle 2|5+6|2\rangle} + \\
& \frac{[35](-3(13)\langle 14\rangle^2[14]^2[15]\langle 24\rangle\langle 34\rangle\dots\langle 6\text{ terms}\rangle\dots-10/3(12)[12]\langle 13\rangle^2[13][15]\langle 24\rangle\langle 34\rangle)}{(12)\langle 13\rangle\langle 23\rangle\langle 34\rangle[56]\langle 2|3+4|1\rangle\langle 2|5+6|2\rangle} + \\
& \frac{-3/2(12)[12]\langle 13\rangle\langle 14\rangle[15]\langle 46\rangle\dots\langle 23\text{ terms}\rangle\dots-3(13)[23]\langle 24\rangle\langle 34\rangle[45]\langle 46\rangle}{(12)\langle 13\rangle\langle 23\rangle\langle 34\rangle\langle 3|5+6|3\rangle} + \\
& \frac{\langle 34\rangle\langle 46\rangle^2(1(13)\langle 34\rangle[34]^2\dots\langle 3\text{ terms}\rangle\dots-21/2(13)\langle 14\rangle[14][34])}{(12)\langle 13\rangle\langle 23\rangle\langle 34\rangle\langle 56\rangle\langle 3|5+6|3\rangle} + \\
& \frac{3[13]\langle 14\rangle^2\langle 34\rangle[34]\langle 36\rangle^2}{(12)\langle 13\rangle\langle 23\rangle\langle 34\rangle\langle 56\rangle\langle 3|5+6|3\rangle} + \\
& \frac{\langle 34\rangle[45](-53/2(14)\langle 24\rangle[24]\langle 34\rangle[35]\dots\langle 5\text{ terms}\rangle\dots-1(13)[13]\langle 14\rangle\langle 24\rangle[25])}{(12)\langle 13\rangle\langle 23\rangle\langle 34\rangle[56]\langle 3|5+6|3\rangle} + \\
& \frac{\langle 34\rangle[35]\langle 13\rangle\langle 23\rangle\langle 24\rangle[24]\langle 34\rangle[35]-35/2(14)[14]\langle 24\rangle[25]-7/2(13)[13]\langle 24\rangle[25]+63/2(14)[14]\langle 34\rangle[35])}{(12)\langle 13\rangle\langle 23\rangle\langle 34\rangle[56]\langle 3|5+6|3\rangle} + \\
& \frac{33/2[12]\langle 13\rangle^3[13]\langle 24\rangle[45]\langle 46\rangle\dots\langle 36\text{ terms}\rangle\dots-14(13)\langle 24\rangle^3[24]^2[25]\langle 36\rangle}{(12)\langle 13\rangle\langle 23\rangle\langle 34\rangle\langle 3|5+6|3\rangle\langle 3|1+2|4\rangle} + \\
& \frac{\langle 34\rangle[45](-1/2(12)\langle 24\rangle^2[24]^2[25]\langle 34\rangle\dots\langle 9\text{ terms}\rangle\dots-1(14)\langle 34\rangle^3[34]^2[45])}{(12)\langle 13\rangle\langle 23\rangle\langle 34\rangle[56]\langle 3|5+6|3\rangle\langle 3|1+2|4\rangle} + \\
& \frac{-241/2(13)\langle 14\rangle[14][15]\langle 24\rangle\langle 46\rangle\dots\langle 34\text{ terms}\rangle\dots-275/12(12)^2[12][15]\langle 34\rangle\langle 46\rangle}{(12)\langle 13\rangle\langle 23\rangle\langle 34\rangle\langle 2|3+4|1\rangle} + \\
& \frac{\langle 46\rangle\langle 23\rangle\langle 23\rangle\langle 34\rangle^2[34]^2\langle 46\rangle\dots\langle 16\text{ terms}\rangle\dots+1/2(12)\langle 14\rangle[14]^2\langle 34\rangle\langle 46\rangle}{(12)\langle 13\rangle\langle 23\rangle\langle 34\rangle\langle 56\rangle\langle 2|3+4|1\rangle} + \\
& \frac{[23]\langle 24\rangle\langle 36\rangle^2\langle 49/2(23)[23]\langle 24\rangle+27/2(24)\langle 34\rangle[34]-23/2(12)[13]\langle 34\rangle)}{(12)\langle 13\rangle\langle 23\rangle\langle 34\rangle\langle 56\rangle\langle 2|3+4|1\rangle} + \\
& \frac{[45]\langle 36\rangle\langle 14\rangle^2[14][15]\langle 24\rangle\langle 34\rangle\dots\langle 8\text{ terms}\rangle\dots-1/3[12]\langle 13\rangle\langle 14\rangle[15]\langle 24\rangle^2}{(12)\langle 13\rangle\langle 23\rangle\langle 34\rangle[56]\langle 2|3+4|1\rangle} + \\
& \frac{[35](-79/6(13)[13]\langle 23\rangle\langle 24\rangle[25]\langle 34\rangle\dots\langle 3\text{ terms}\rangle\dots-3/2[12]\langle 13\rangle^2[15]\langle 24\rangle^2)}{(12)\langle 13\rangle\langle 23\rangle\langle 34\rangle[56]\langle 2|3+4|1\rangle} + \\
& \frac{-4(13)\langle 14\rangle[14][15]\langle 24\rangle^2[25]}{(12)\langle 13\rangle\langle 23\rangle\langle 34\rangle[56]\langle 2|3+4|1\rangle} + \\
& \frac{\langle 24\rangle\langle 36\rangle(s_{13}-s_{24})(1/6[12]\langle 13\rangle\langle 24\rangle[45]+1/6(13)^2[13][15]+1/6(13)[13]\langle 34\rangle[45]-1/6\langle 34\rangle^2[34][45])}{(12)\langle 13\rangle\langle 23\rangle\langle 34\rangle\langle 2|3+4|1\rangle\langle 3|1+2|4\rangle} + \\
& \frac{\langle 34\rangle^2\langle 24\rangle[45]^2(s_{13}-s_{24})(1/6\langle 34\rangle[34]-1/6(12)[12])}{(12)\langle 13\rangle\langle 23\rangle\langle 34\rangle[56]\langle 2|3+4|1\rangle\langle 3|1+2|4\rangle} + \\
& \frac{62/3(13)\langle 24\rangle^2[24][25]\langle 36\rangle\dots\langle 30\text{ terms}\rangle\dots+3/2(12)[23]\langle 34\rangle^2\langle 36\rangle[45]}{(12)\langle 13\rangle\langle 23\rangle\langle 34\rangle\langle 3|1+2|4\rangle} + \\
& \frac{\langle 46\rangle(-21/2(12)\langle 23\rangle[24]^2\langle 34\rangle\langle 46\rangle+21/2(13)^2[14]\langle 34\rangle[34]\langle 46\rangle-1/2(12)^2[12][24]\langle 34\rangle\langle 36\rangle-1/2(12)^2[12]^2(13)\langle 36\rangle)}{(12)\langle 13\rangle\langle 23\rangle\langle 34\rangle\langle 56\rangle\langle 3|1+2|4\rangle} + \\
& \frac{1/2(12)^2[12]^2(14)\langle 36\rangle^2}{(12)\langle 13\rangle\langle 23\rangle\langle 34\rangle\langle 56\rangle\langle 3|1+2|4\rangle} + \\
& \frac{\langle 34\rangle[45]\langle 37/3(13)\langle 24\rangle[24]\langle 34\rangle[35]\dots\langle 5\text{ terms}\rangle\dots-11/6(12)[23]\langle 34\rangle^2[45])}{(12)\langle 13\rangle\langle 23\rangle\langle 34\rangle[56]\langle 3|1+2|4\rangle} + \\
& \frac{\langle 14\rangle\langle 230/3(14)[15]\langle 36\rangle+199/3\langle 24\rangle[25]\langle 36\rangle+257/12\langle 34\rangle[35]\langle 36\rangle+135/4\langle 34\rangle[45]\langle 46\rangle)}{(12)\langle 13\rangle\langle 23\rangle\langle 34\rangle} + \\
& \frac{\langle 46\rangle\langle 67/2(12)[12]\langle 14\rangle\langle 36\rangle-105/2(12)[24]\langle 34\rangle\langle 46\rangle-21/2(14)^2[14]\langle 36\rangle+13(14)\langle 24\rangle[24]\langle 36\rangle)}{(12)\langle 13\rangle\langle 23\rangle\langle 34\rangle\langle 56\rangle} + \\
& \frac{9[13]\langle 14\rangle^2\langle 36\rangle^2}{(12)\langle 13\rangle\langle 23\rangle\langle 34\rangle\langle 56\rangle} + \\
& \frac{\langle 14\rangle\langle 34\rangle[45](-329/12(14)[15]-79/3\langle 34\rangle[35])}{(12)\langle 13\rangle\langle 23\rangle\langle 34\rangle[56]} + \\
& \frac{\langle 46\rangle\langle 77/2(24)[25]+479/12\langle 34\rangle[35]-431/3(14)[15])}{(12)\langle 23\rangle\langle 34\rangle} + \\
& \frac{\langle 46\rangle(-30[12]\langle 14\rangle\langle 26\rangle\dots\langle 4\text{ terms}\rangle\dots-23\langle 34\rangle[34]\langle 46\rangle)}{(12)\langle 23\rangle\langle 34\rangle\langle 56\rangle} + \\
& \frac{\langle 34\rangle[35]\langle 8(14)[15]+83/12\langle 34\rangle[35])}{(12)\langle 23\rangle\langle 34\rangle[56]} + \\
& \frac{1(14)[15]\langle 24\rangle[25]}{(12)\langle 23\rangle\langle 34\rangle[56]}
\end{aligned}$$