

$$\begin{aligned}
& \frac{7/16(s_{13}-s_{24})\langle 24\rangle\langle 26\rangle\langle 13\rangle\langle 4|2+3|1\rangle\langle 3|1+4|2\rangle\langle 35\rangle}{\langle 1|2+3|4\rangle\langle 2|1+4|3\rangle\Delta_{14|23|56}^2} + \\
& \frac{1/8\langle 2|1+4|5\rangle\langle s_{23}-s_{56}\rangle\langle 34\rangle\langle 3|1+4|2\rangle\langle 23\rangle\langle 46\rangle}{\langle 14\rangle\Delta_{14|23|56}^2\langle 2|1+4|3\rangle} + \\
& \frac{-3/8\langle 2|3+4|1\rangle\langle s_{23}-s_{14}\rangle\langle 36\rangle\langle 3|1+4|2\rangle\langle 23\rangle\langle 46\rangle}{\langle 56\rangle\Delta_{14|23|56}^2\langle 2|1+4|3\rangle} + \\
& \frac{\langle 4|2+3|1\rangle\langle 13\rangle\langle 36\rangle\langle 3|1+4|2\rangle\langle -7/16[35]\langle 24\rangle-7/16[23]\langle 45\rangle)}{\langle 1|2+3|4\rangle\Delta_{14|23|56}^2} + \\
& (123456 \rightarrow -432165) + \\
& \frac{[24]\langle 34\rangle(-1[13][25]\langle 36\rangle-1[25][14]\langle 46\rangle+1[35]\langle 36\rangle[12]+1[45]\langle 46\rangle[12])}{[34]\langle 56\rangle[56]s_{234}\langle 4|2+3|4\rangle} + \\
& \frac{3[13]\langle 24\rangle\langle 26\rangle\langle 3|1+4|2\rangle[35]\langle s_{124}-s_{134}\rangle}{\Delta_{14|23|56}\langle 2|1+4|3\rangle^3} + \\
& \frac{5/2[13]\langle 24\rangle\langle 26\rangle\langle 3|1+4|2\rangle^2[35]\langle s_{124}-s_{134}\rangle}{\Delta_{14|23|56}^2\langle 2|1+4|3\rangle^2} + \\
& \frac{1[12]\langle 24\rangle\langle 26\rangle\langle 3|1+4|2\rangle[35]}{\Delta_{14|23|56}\langle 2|1+4|3\rangle^2} + \\
& \frac{-1(s_{13}-s_{24})[13]\langle 26\rangle\langle 13\rangle\langle 3|1+4|2\rangle[35]}{\Delta_{14|23|56}\langle 1|2+3|4\rangle\langle 2|1+4|3\rangle^2} + \\
& \frac{-1[13]\langle 34\rangle\langle 36\rangle[35]\langle s_{124}-s_{134}\rangle}{\Delta_{14|23|56}\langle 2|1+4|3\rangle^2} + \\
& \frac{-1/2[13]\langle 26\rangle\langle 34\rangle[25]\langle s_{124}-s_{134}\rangle}{\Delta_{14|23|56}\langle 2|1+4|3\rangle^2} + \\
& \frac{[35]\langle s_{124}-s_{134}\rangle(s_{13}-s_{24})\langle 1/2\langle 24\rangle\langle 36\rangle[24]-1/2[24]\langle 23\rangle\langle 46\rangle-1/2\langle 26\rangle\langle 13\rangle[12])}{\Delta_{14|23|56}\langle 1|2+3|4\rangle\langle 2|1+4|3\rangle^2} + \\
& \frac{\langle 26\rangle\langle s_{124}-s_{134}\rangle\langle 1/2[13]\langle 36\rangle\langle 14\rangle[12]+1/2[13][24]\langle 34\rangle\langle 46\rangle-1/2[34]\langle 34\rangle\langle 46\rangle[12])}{\langle 56\rangle\Delta_{14|23|56}\langle 2|1+4|3\rangle^2} + \\
& \frac{[35]\langle s_{124}-s_{134}\rangle(1[35]\langle 34\rangle^2[14]-1/2[13][25]\langle 23\rangle\langle 34\rangle-1/2\langle 12\rangle[15]\langle 34\rangle[12]+1/2\langle 24\rangle[15]\langle 13\rangle[12])}{[56]\Delta_{14|23|56}\langle 2|1+4|3\rangle^2} + \\
& \frac{-1[35]^2\langle 24\rangle\langle 3|1+4|2\rangle}{[56]\langle 1|2+4|3\rangle\langle 2|1+4|3\rangle^2} + \\
& \frac{-2[35][23]\langle 34\rangle\langle 26\rangle}{\langle 1|2+4|3\rangle\langle 2|1+4|3\rangle^2} + \\
& \frac{-2[35]^2\langle 34\rangle\langle 2|3+4|2\rangle}{[56]\langle 1|2+4|3\rangle\langle 2|1+4|3\rangle^2} + \\
& \frac{-4[35]\langle 34\rangle[15]}{[56]\langle 2|1+4|3\rangle^2} + \\
& \frac{35/32\langle 6|1+4|5\rangle\langle s_{15}+s_{16}+s_{45}+s_{46}\rangle\langle 4|2+3|1\rangle\langle 3|1+4|2\rangle s_{23}\langle s_{134}-s_{124}\rangle}{\Delta_{14|23|56}^3\langle 2|1+4|3\rangle} + \\
& \frac{1/4[34]\langle 4|2+3|1\rangle\langle 13\rangle\langle s_{123}-s_{234}\rangle\langle 3|1+4|2\rangle\langle 6|1+4|5\rangle}{\langle 1|2+3|4\rangle\langle 2|1+4|3\rangle\Delta_{14|23|56}^2} + \\
& \frac{\langle 4|2+3|1\rangle\langle s_{123}-s_{234}\rangle\langle 3|1+4|2\rangle\langle -1/8[35]\langle 13\rangle\langle 36\rangle[34]-1/8[35][24]\langle 26\rangle\langle 13\rangle-1/2\langle 12\rangle[45]\langle 36\rangle[23]\rangle}{\langle 1|2+3|4\rangle\langle 2|1+4|3\rangle\Delta_{14|23|56}^2} + \\
& \frac{-1/4\langle 6|1+4|5\rangle\langle s_{13}-s_{24}\rangle\langle 23\rangle\langle s_{123}-s_{234}\rangle\langle 3|1+4|2\rangle\langle 23\rangle}{\langle 1|2+3|4\rangle\langle 2|1+4|3\rangle\Delta_{14|23|56}^2} + \\
& \frac{3/8\langle s_{13}-s_{24}\rangle[24]\langle 23\rangle\langle s_{123}-s_{234}\rangle\langle 3|1+4|2\rangle[35]\langle 46\rangle}{\langle 1|2+3|4\rangle\langle 2|1+4|3\rangle\Delta_{14|23|56}^2} + \\
& \frac{\langle 4|2+3|1\rangle\langle 3|1+4|2\rangle\langle -35/4\langle 12\rangle[15]\langle 16\rangle[12]\rangle\dots\langle 13\text{ terms}\rangle\dots+73/8[25]\langle 24\rangle\langle 26\rangle[24]}{\Delta_{14|23|56}^2\langle 2|1+4|3\rangle} + \\
& \frac{\langle 3|1+4|2\rangle\langle -3/8[12]\langle 24\rangle^2\langle 26\rangle[24][25]\rangle\dots\langle 9\text{ terms}\rangle\dots-8[34][12]\langle 23\rangle\langle 34\rangle[35]\langle 46\rangle}{\Delta_{14|23|56}^2\langle 2|1+4|3\rangle} + \\
& \frac{\langle 4|2+3|1\rangle\langle s_{124}-s_{134}\rangle\langle 1/2[45][23]\langle 34\rangle\langle 36\rangle\dots\langle 7\text{ terms}\rangle\dots+29/4[24]\langle 34\rangle[45]\langle 46\rangle}{\Delta_{14|23|56}^2\langle 2|1+4|3\rangle} + \\
& \frac{\langle s_{124}-s_{134}\rangle\langle -65/8[12][24]\langle 23\rangle\langle 34\rangle[35]\langle 46\rangle\dots\langle 12\text{ terms}\rangle\dots+1/2[14][24]\langle 34\rangle^2[35]\langle 46\rangle}{\Delta_{14|23|56}^2\langle 2|1+4|3\rangle} + \\
& \frac{\langle 13\rangle[24]\langle 6|1+4|5\rangle\langle s_{13}-s_{24}\rangle\langle -1/2[13]\langle 13\rangle-1/2[23]\langle 23\rangle\rangle}{\Delta_{14|23|56}\langle 1|2+3|4\rangle^2\langle 2|1+4|3\rangle} + \\
& \frac{-1/2[24]\langle 13\rangle^2\langle s_{13}-s_{24}\rangle\langle s_{123}-s_{234}\rangle[35]\langle 46\rangle}{\langle 14\rangle\Delta_{14|23|56}\langle 1|2+3|4\rangle^2\langle 2|1+4|3\rangle} + \\
& \frac{3/2\langle s_{13}-s_{24}\rangle[24]\langle 13\rangle\langle 34\rangle[35]\langle 46\rangle}{\langle 14\rangle\Delta_{14|23|56}\langle 1|2+3|4\rangle\langle 2|1+4|3\rangle} + \\
& \frac{\langle s_{23}-s_{56}\rangle\langle 46\rangle\langle -1/2[14]\langle 24\rangle[24]\langle 13\rangle[25]\rangle\dots\langle 4\text{ terms}\rangle\dots+1/2\langle 24\rangle\langle 34\rangle[45][24]^2}{\langle 14\rangle[14]\Delta_{14|23|56}\langle 1|2+3|4\rangle\langle 2|1+4|3\rangle} + \\
& \frac{-1/2[12][24]\langle 23\rangle[45]\langle 3|1+4|3\rangle\langle 46\rangle}{[14]\Delta_{14|23|56}\langle 1|2+3|4\rangle\langle 2|1+4|3\rangle} + \\
& \frac{-1\langle s_{23}-s_{56}\rangle[12][24]\langle 23\rangle[45]\langle 46\rangle}{[14]\Delta_{14|23|56}\langle 1|2+3|4\rangle\langle 2|1+4|3\rangle} + \\
& \frac{[24]\langle 26\rangle\langle 1/4[24]\langle 23\rangle\langle 34\rangle[23]\langle 46\rangle\dots\langle 3\text{ terms}\rangle\dots-1/4[12]\langle 24\rangle[24]\langle 13\rangle\langle 46\rangle}{\langle 56\rangle\Delta_{14|23|56}\langle 1|2+3|4\rangle\langle 2|1+4|3\rangle} + \\
& \frac{\langle 26\rangle\langle s_{14}-s_{23}\rangle\langle -3/4[24][23]\langle 34\rangle\langle 36\rangle-3/4[24]^2\langle 34\rangle\langle 46\rangle+1/4[23]\langle 13\rangle\langle 36\rangle[12]+1/2[24]\langle 36\rangle\langle 14\rangle[12])}{\langle 56\rangle\Delta_{14|23|56}\langle 1|2+3|4\rangle\langle 2|1+4|3\rangle} + \\
& \frac{\langle 36\rangle[34]\langle 46\rangle\langle s_{14}-s_{23}\rangle\langle -1/4[24]\langle 34\rangle+1/4\langle 13\rangle[12]\rangle}{\langle 56\rangle\Delta_{14|23|56}\langle 1|2+3|4\rangle\langle 2|1+4|3\rangle} + \\
& \frac{-1/2[34]\langle s_{14}-s_{23}\rangle\langle 34\rangle\langle 36\rangle^2[23]}{\langle 56\rangle\Delta_{14|23|56}\langle 1|2+3|4\rangle\langle 2|1+4|3\rangle} + \\
& \frac{[25]\langle -1/8[14][24]\langle 12\rangle\langle 34\rangle^2[35]+1/2[14]\langle 14\rangle[12]\langle 12\rangle\langle 34\rangle[45]-3/8[14][34]\langle 14\rangle\langle 34\rangle^2[45]+1/8[25]\langle 12\rangle^2\langle 23\rangle[12]^2\rangle}{[56]\Delta_{14|23|56}\langle 1|2+3|4\rangle\langle 2|1+4|3\rangle} + \\
& \frac{[25]\langle s_{14}-s_{23}\rangle\langle -11/8[45]\langle 34\rangle^2[34]\rangle\dots\langle 4\text{ terms}\rangle\dots+1/8[25]\langle 12\rangle\langle 23\rangle[12])}{[56]\Delta_{14|23|56}\langle 1|2+3|4\rangle\langle 2|1+4|3\rangle} + \\
& \frac{1/2\langle s_{14}-s_{23}\rangle[24]\langle 34\rangle^2[35][45]}{[56]\Delta_{14|23|56}\langle 1|2+3|4\rangle\langle 2|1+4|3\rangle} + \\
& \frac{5/4[25][14]^2\langle 14\rangle^2\langle 36\rangle\dots\langle 56\text{ terms}\rangle\dots-25/8[12]\langle 24\rangle[24]\langle 13\rangle\langle 26\rangle[25]}{\Delta_{14|23|56}\langle 1|2+3|4\rangle\langle 2|1+4|3\rangle} + \\
& \frac{1/2[12]\langle 13\rangle\langle 34\rangle[35]\langle 46\rangle}{\langle 14\rangle\Delta_{14|23|56}\langle 2|1+4|3\rangle} + \\
& \frac{1/2\langle 6|1+4|5\rangle\langle 23\rangle[12]^2}{[14]\Delta_{14|23|56}\langle 2|1+4|3\rangle} + \\
& \frac{[12]\langle 26\rangle\langle -1[23]\langle 34\rangle\langle 36\rangle-1/4\langle 13\rangle\langle 46\rangle[12]\rangle}{\langle 56\rangle\Delta_{14|23|56}\langle 2|1+4|3\rangle} + \\
& \frac{[25]\langle -3[35]\langle 34\rangle^2[14]\rangle\dots\langle 3\text{ terms}\rangle\dots-1/8\langle 24\rangle[15]\langle 13\rangle[12]}{[56]\Delta_{14|23|56}\langle 2|1+4|3\rangle} + \\
& \frac{2\langle 14\rangle\langle 24\rangle\langle 26\rangle[24]^2[25]\rangle\dots\langle 29\text{ terms}\rangle\dots+261/8\langle 12\rangle\langle 34\rangle\langle 36\rangle[23]^2[45]}{\langle 14\rangle[34]\langle 56\rangle[56]\langle 1|2+3|4\rangle\langle 2|1+4|3\rangle} + \\
& \frac{1[35][45][23]\langle 34\rangle}{[34][56]\langle 1|2+4|3\rangle\langle 2|1+4|3\rangle} + \\
& \frac{-2[35]\langle 34\rangle\langle 16\rangle[12]}{\langle 56\rangle[56]\langle 1|2+4|3\rangle\langle 2|1+4|3\rangle} + \\
& \frac{3[35][25]\langle 34\rangle}{[56]\langle 1|2+4|3\rangle\langle 2|1+4|3\rangle} + \\
& \frac{1[13][24]\langle 12\rangle\langle 34\rangle\langle 36\rangle[35]\rangle\dots\langle 6\text{ terms}\rangle\dots+1[13][24]\langle 13\rangle\langle 23\rangle[35]\langle 46\rangle}{\langle 14\rangle[34]\langle 56\rangle[56]\langle 2|1+4|3\rangle\langle 2|1+3|4\rangle} + \\
& \frac{2[35][24]\langle 34\rangle\langle 46\rangle\dots\langle 6\text{ terms}\rangle\dots-229/8[25][14]\langle 46\rangle\langle 14\rangle}{\langle 14\rangle[34]\langle 56\rangle[56]\langle 2|1+4|3\rangle} + \\
& \frac{3/8[24]\langle 23\rangle\langle s_{123}-s_{234}\rangle\langle 3|1+4|2\rangle[25]\langle 46\rangle}{\langle 1|2+3|4\rangle\Delta_{14|23|56}^2} + \\
& \frac{\langle 3|1+4|2\rangle\langle 49/16[13][25]\langle 34\rangle\langle 36\rangle\dots\langle 3\text{ terms}\rangle\dots-31/8[25]\langle 23\rangle\langle 46\rangle[12])}{\Delta_{14|23|56}^2} + \\
& \frac{57/8[12]\langle 34\rangle\langle 36\rangle[25]\langle s_{124}-s_{134}\rangle}{\Delta_{14|23|56}^2} + \\
& \frac{-1/2[24]\langle 6|1+4|5\rangle\langle 13\rangle^2[12]}{\Delta_{14|23|56}\langle 1|2+3|4\rangle^2} + \\
& \frac{-1/2[24]\langle 13\rangle^2\langle s_{123}-s_{234}\rangle[25]\langle 46\rangle}{\langle 14\rangle\Delta_{14|23|56}\langle 1|2+3|4\rangle^2} + \\
& \frac{3/2[24]\langle 13\rangle\langle 34\rangle[25]\langle 46\rangle}{\langle 14\rangle\Delta_{14|23|56}\langle 1|2+3|4\rangle} + \\
& \frac{[25]\langle 1/8[25][24]\langle 23\rangle\langle 34\rangle-1/8[24]\langle 34\rangle^2[45]-1/8[25]\langle 13\rangle\langle 23\rangle[12])}{[56]\Delta_{14|23|56}\langle 1|2+3|4\rangle} + \\
& \frac{[24]\langle 1[34]\langle 14\rangle[12]\langle 34\rangle\langle 36\rangle[45]\rangle\dots\langle 10\text{ terms}\rangle\dots-1[24]^2\langle 23\rangle\langle 34\rangle[35]\langle 46\rangle}{\langle 14\rangle[14][34]\langle 56\rangle[56]\langle 1|2+3|4\rangle\langle 4|2+3|4\rangle} + \\
& \frac{-1\langle 3|1+2|4\rangle^2[24]\langle 46\rangle^2}{\langle 14\rangle[14]\langle 56\rangle\langle 1|2+3|4\rangle\langle 2|1+3|4\rangle\langle 4|5+6|4\rangle} + \\
& \frac{-1[24]^2\langle 12\rangle\langle 23\rangle[25]\langle 46\rangle\dots\langle 20\text{ terms}\rangle\dots-1[14]\langle 14\rangle[24]\langle 12\rangle\langle 36\rangle[25]}{\langle 14\rangle[34]\langle 56\rangle[56]\langle 1|2+3|4\rangle\langle 2|1+3|4\rangle} + \\
& \frac{-269/8[14]\langle 14\rangle[24]\langle 36\rangle[25]\rangle\dots\langle 11\text{ terms}\rangle\dots-1[12][24]\langle 12\rangle\langle 36\rangle[25]}{\langle 14\rangle[14][34]\langle 56\rangle[56]\langle 1|2+3|4\rangle}
\end{aligned}$$