A basis for the new $\mathrm{C}^6_{\mathrm{GF}}(\mathfrak{ham}_2, \mathfrak{sp}(2,\mathbb{R}))_8$:

$$\hat{\mathbf{q}}_1 = \frac{1}{8} z_1^0 z_1^1 z_3^0 z_3^1 z_4^0 z_8^8 - \frac{1}{2} z_1^0 z_1^1 z_3^0 z_3^1 z_4^1 z_8^7 + \frac{3}{4} z_1^0 z_1^1 z_3^0 z_3^1 z_4^2 z_8^6 + \frac{1}{8} z_1^0 z_1^1 z_3^0 z_3^1 z_4^4 z_8^4 - \frac{1}{2} z_1^0 z_1^1 z_3^0 z_3^1 z_4^3 z_8^5$$

$$- \frac{1}{4} z_1^0 z_1^1 z_3^0 z_3^2 z_4^0 z_8^7 + z_1^0 z_1^1 z_3^0 z_3^2 z_4^1 z_8^6 - \frac{3}{2} z_1^0 z_1^1 z_3^0 z_3^2 z_4^2 z_8^5 + z_1^0 z_1^1 z_3^0 z_3^2 z_4^3 z_8^4 - \frac{1}{4} z_1^0 z_1^1 z_3^0 z_3^2 z_4^4 z_8^3$$

$$+ \frac{1}{8} z_1^0 z_1^1 z_3^0 z_3^3 z_4^0 z_8^6 - \frac{1}{2} z_1^0 z_1^1 z_3^0 z_3^3 z_4^1 z_8^5 + \frac{3}{4} z_1^0 z_1^1 z_3^0 z_3^3 z_4^2 z_8^4 - \frac{1}{2} z_1^0 z_1^1 z_3^0 z_3^3 z_4^3 z_8^3 + \frac{1}{8} z_1^0 z_1^1 z_3^0 z_3^3 z_4^4 z_8^2$$

$$+ \frac{3}{8} z_1^0 z_1^1 z_3^1 z_3^2 z_4^0 z_8^6 - \frac{3}{2} z_1^0 z_1^1 z_3^1 z_3^2 z_4^1 z_8^5 + \frac{9}{4} z_1^0 z_1^1 z_3^1 z_3^2 z_4^2 z_8^4 + \frac{3}{8} z_1^0 z_1^1 z_3^1 z_3^2 z_4^4 z_8^2 - \frac{3}{2} z_1^0 z_1^1 z_3^1 z_3^2 z_4^3 z_8^3$$

$$- \frac{1}{4} z_1^0 z_1^1 z_3^1 z_3^3 z_4^0 z_8^5 - \frac{3}{2} z_1^0 z_1^1 z_3^1 z_3^3 z_4^2 z_8^3 + z_1^0 z_1^1 z_3^1 z_3^3 z_4^1 z_8^4 + z_1^0 z_1^1 z_3^1 z_3^3 z_4^3 z_8^2 - \frac{1}{4} z_1^0 z_1^1 z_3^1 z_3^3 z_4^4 z_8^1$$

$$+ \frac{1}{8} z_1^0 z_1^1 z_3^2 z_3^3 z_4^0 z_8^4 - \frac{1}{2} z_1^0 z_1^1 z_3^2 z_3^3 z_4^1 z_8^3 + \frac{3}{4} z_1^0 z_1^1 z_3^2 z_3^3 z_4^2 z_8^2 - \frac{1}{2} z_1^0 z_1^1 z_3^2 z_3^3 z_4^3 z_8^1 + \frac{1}{8} z_1^0 z_1^1 z_3^2 z_3^3 z_4^4 z_8^0$$

$$\hat{\mathbf{q}}_2 = \frac{1}{3} z_1^0 z_1^1 z_3^0 z_3^1 z_5^1 z_7^7 + 2 z_1^0 z_1^1 z_3^0 z_3^1 z_5^3 z_7^5 - \frac{4}{3} z_1^0 z_1^1 z_3^0 z_3^1 z_5^2 z_7^6 - \frac{4}{3} z_1^0 z_1^1 z_3^0 z_3^1 z_5^4 z_7^4 + \frac{1}{3} z_1^0 z_1^1 z_3^0 z_3^1 z_5^5 z_7^3$$

$$- \frac{1}{6} z_1^0 z_1^1 z_3^0 z_3^2 z_5^0 z_7^7 + \frac{1}{6} z_1^0 z_1^1 z_3^0 z_3^2 z_5^1 z_7^6 + z_1^0 z_1^1 z_3^0 z_3^2 z_5^2 z_7^5 - \frac{7}{3} z_1^0 z_1^1 z_3^0 z_3^2 z_5^3 z_7^4 + \frac{11}{6} z_1^0 z_1^1 z_3^0 z_3^2 z_5^4 z_7^3$$

$$- \frac{1}{2} z_1^0 z_1^1 z_3^0 z_3^2 z_5^5 z_7^2 + \frac{1}{6} z_1^0 z_1^1 z_3^0 z_3^3 z_5^0 z_7^6 - \frac{1}{2} z_1^0 z_1^1 z_3^0 z_3^3 z_5^1 z_7^5 + \frac{1}{3} z_1^0 z_1^1 z_3^0 z_3^3 z_5^2 z_7^4 + \frac{1}{3} z_1^0 z_1^1 z_3^0 z_3^3 z_5^3 z_7^3$$

$$- \frac{1}{2} z_1^0 z_1^1 z_3^0 z_3^3 z_5^4 z_7^2 + \frac{1}{6} z_1^0 z_1^1 z_3^0 z_3^3 z_5^5 z_7^1 + \frac{1}{2} z_1^0 z_1^1 z_3^1 z_3^2 z_5^0 z_7^6 - \frac{3}{2} z_1^0 z_1^1 z_3^1 z_3^2 z_5^1 z_7^5 + z_1^0 z_1^1 z_3^1 z_3^2 z_5^3 z_7^3$$

$$+ z_1^0 z_1^1 z_3^1 z_3^2 z_5^2 z_7^4 - \frac{3}{2} z_1^0 z_1^1 z_3^1 z_3^2 z_5^4 z_7^2 + \frac{1}{2} z_1^0 z_1^1 z_3^1 z_3^2 z_5^5 z_7^1 - \frac{1}{2} z_1^0 z_1^1 z_3^1 z_3^3 z_5^0 z_7^5 + \frac{11}{6} z_1^0 z_1^1 z_3^1 z_3^3 z_5^1 z_7^4$$

$$- \frac{7}{3} z_1^0 z_1^1 z_3^1 z_3^3 z_5^2 z_7^3 + z_1^0 z_1^1 z_3^1 z_3^3 z_5^3 z_7^2 + \frac{1}{6} z_1^0 z_1^1 z_3^1 z_3^3 z_5^4 z_7^1 - \frac{1}{6} z_1^0 z_1^1 z_3^1 z_3^3 z_5^5 z_7^0 + \frac{1}{3} z_1^0 z_1^1 z_3^2 z_3^3 z_5^0 z_7^4$$

$$- \frac{4}{3} z_1^0 z_1^1 z_3^2 z_3^3 z_5^1 z_7^3 + 2 z_1^0 z_1^1 z_3^2 z_3^3 z_5^2 z_7^2 - \frac{4}{3} z_1^0 z_1^1 z_3^2 z_3^3 z_5^3 z_7^1 + \frac{1}{3} z_1^0 z_1^1 z_3^2 z_3^3 z_5^4 z_7^0$$

$$\hat{\mathbf{q}}_3 = - \frac{1}{8} z_1^0 z_1^1 z_3^0 z_4^0 z_4^2 z_7^7 + \frac{1}{4} z_1^0 z_1^1 z_3^0 z_4^0 z_4^3 z_7^6 - \frac{1}{8} z_1^0 z_1^1 z_3^0 z_4^0 z_4^4 z_7^5 + \frac{1}{2} z_1^0 z_1^1 z_3^0 z_4^1 z_4^2 z_7^6 - z_1^0 z_1^1 z_3^0 z_4^1 z_4^3 z_7^5$$

$$+ \frac{1}{2} z_1^0 z_1^1 z_3^0 z_4^1 z_4^4 z_7^4 + z_1^0 z_1^1 z_3^0 z_4^2 z_4^3 z_7^4 - \frac{5}{8} z_1^0 z_1^1 z_3^0 z_4^2 z_4^4 z_7^3 + \frac{1}{4} z_1^0 z_1^1 z_3^0 z_4^3 z_4^4 z_7^2 + \frac{1}{4} z_1^0 z_1^1 z_3^1 z_4^0 z_4^1 z_7^7$$

$$- \frac{3}{8} z_1^0 z_1^1 z_3^1 z_4^0 z_4^2 z_7^6 + \frac{1}{8} z_1^0 z_1^1 z_3^1 z_4^0 z_4^4 z_7^4 + z_1^0 z_1^1 z_3^1 z_4^1 z_4^3 z_7^4 - \frac{3}{4} z_1^0 z_1^1 z_3^1 z_4^1 z_4^4 z_7^3 - \frac{3}{2} z_1^0 z_1^1 z_3^1 z_4^2 z_4^3 z_7^3$$

$$+ \frac{9}{8} z_1^0 z_1^1 z_3^1 z_4^2 z_4^4 z_7^2 - \frac{1}{2} z_1^0 z_1^1 z_3^1 z_4^3 z_4^4 z_7^1 - \frac{1}{2} z_1^0 z_1^1 z_3^2 z_4^0 z_4^1 z_7^6 + \frac{9}{8} z_1^0 z_1^1 z_3^2 z_4^0 z_4^2 z_7^5 - \frac{3}{4} z_1^0 z_1^1 z_3^2 z_4^0 z_4^3 z_7^4$$

$$+ \frac{1}{8} z_1^0 z_1^1 z_3^2 z_4^0 z_4^4 z_7^3 - \frac{3}{2} z_1^0 z_1^1 z_3^2 z_4^1 z_4^2 z_7^4 + z_1^0 z_1^1 z_3^2 z_4^1 z_4^3 z_7^3 - \frac{3}{8} z_1^0 z_1^1 z_3^2 z_4^2 z_4^4 z_7^1 + \frac{1}{4} z_1^0 z_1^1 z_3^2 z_4^3 z_4^4 z_7^0$$

$$+ \frac{1}{4} z_1^0 z_1^1 z_3^3 z_4^0 z_4^1 z_7^5 - \frac{5}{8} z_1^0 z_1^1 z_3^3 z_4^0 z_4^2 z_7^4 + \frac{1}{2} z_1^0 z_1^1 z_3^3 z_4^0 z_4^3 z_7^3 - \frac{1}{8} z_1^0 z_1^1 z_3^3 z_4^0 z_4^4 z_7^2 + z_1^0 z_1^1 z_3^3 z_4^1 z_4^2 z_7^3$$

$$- z_1^0 z_1^1 z_3^3 z_4^1 z_4^3 z_7^2 + \frac{1}{4} z_1^0 z_1^1 z_3^3 z_4^1 z_4^4 z_7^1 + \frac{1}{2} z_1^0 z_1^1 z_3^3 z_4^2 z_4^3 z_7^1 - \frac{1}{8} z_1^0 z_1^1 z_3^3 z_4^2 z_4^4 z_7^0$$

$$
\begin{aligned}
\widehat{\mathbf{q}}_4 = {} & \frac{1}{30} z_1^0 z_1^1 z_3^0 z_4^3 z_5^0 z_6^6 - \frac{1}{6} z_1^0 z_1^1 z_3^0 z_4^3 z_5^1 z_6^5 + \frac{1}{3} z_1^0 z_1^1 z_3^0 z_4^3 z_5^2 z_6^4 - \frac{1}{3} z_1^0 z_1^1 z_3^0 z_4^3 z_5^3 z_6^3 + \frac{1}{6} z_1^0 z_1^1 z_3^0 z_4^3 z_5^4 z_6^2 \\
& - \frac{1}{30} z_1^0 z_1^1 z_3^0 z_4^4 z_5^0 z_6^5 - \frac{1}{30} z_1^0 z_1^1 z_3^0 z_4^3 z_5^5 z_6^1 + \frac{1}{6} z_1^0 z_1^1 z_3^0 z_4^4 z_5^1 z_6^4 - \frac{1}{3} z_1^0 z_1^1 z_3^0 z_4^4 z_5^2 z_6^3 - \frac{1}{6} z_1^0 z_1^1 z_3^0 z_4^4 z_5^4 z_6^1 \\
& + \frac{1}{3} z_1^0 z_1^1 z_3^0 z_4^4 z_5^3 z_6^2 + \frac{1}{30} z_1^0 z_1^1 z_3^0 z_4^4 z_5^5 z_6^0 - \frac{1}{10} z_1^0 z_1^1 z_3^1 z_4^2 z_5^0 z_6^6 + \frac{1}{2} z_1^0 z_1^1 z_3^1 z_4^2 z_5^1 z_6^5 - z_1^0 z_1^1 z_3^1 z_4^2 z_5^2 z_6^4 \\
& + z_1^0 z_1^1 z_3^1 z_4^2 z_5^3 z_6^3 - \frac{1}{2} z_1^0 z_1^1 z_3^1 z_4^2 z_5^4 z_6^2 + \frac{1}{10} z_1^0 z_1^1 z_3^1 z_4^2 z_5^5 z_6^1 + \frac{1}{10} z_1^0 z_1^1 z_3^1 z_4^3 z_5^0 z_6^5 + z_1^0 z_1^1 z_3^1 z_4^3 z_5^2 z_6^3 \\
& - \frac{1}{2} z_1^0 z_1^1 z_3^1 z_4^3 z_5^1 z_6^4 - z_1^0 z_1^1 z_3^1 z_4^3 z_5^3 z_6^2 + \frac{1}{2} z_1^0 z_1^1 z_3^1 z_4^3 z_5^4 z_6^1 - \frac{1}{10} z_1^0 z_1^1 z_3^1 z_4^3 z_5^5 z_6^0 + \frac{1}{10} z_1^0 z_1^1 z_3^2 z_4^1 z_5^0 z_6^6 \\
& - \frac{1}{2} z_1^0 z_1^1 z_3^2 z_4^1 z_5^1 z_6^5 + z_1^0 z_1^1 z_3^2 z_4^1 z_5^2 z_6^4 - z_1^0 z_1^1 z_3^2 z_4^1 z_5^3 z_6^3 + \frac{1}{2} z_1^0 z_1^1 z_3^2 z_4^1 z_5^4 z_6^2 - \frac{1}{10} z_1^0 z_1^1 z_3^2 z_4^1 z_5^5 z_6^1 \\
& - \frac{1}{10} z_1^0 z_1^1 z_3^2 z_4^2 z_5^0 z_6^5 + \frac{1}{2} z_1^0 z_1^1 z_3^2 z_4^2 z_5^1 z_6^4 - z_1^0 z_1^1 z_3^2 z_4^2 z_5^2 z_6^3 + z_1^0 z_1^1 z_3^2 z_4^2 z_5^3 z_6^2 - \frac{1}{2} z_1^0 z_1^1 z_3^2 z_4^2 z_5^4 z_6^1 \\
& + \frac{1}{10} z_1^0 z_1^1 z_3^2 z_4^2 z_5^5 z_6^0 - \frac{1}{30} z_1^0 z_1^1 z_3^3 z_4^0 z_5^0 z_6^6 + \frac{1}{6} z_1^0 z_1^1 z_3^3 z_4^0 z_5^1 z_6^5 - \frac{1}{3} z_1^0 z_1^1 z_3^3 z_4^0 z_5^2 z_6^4 + \frac{1}{3} z_1^0 z_1^1 z_3^3 z_4^0 z_5^3 z_6^3 \\
& + \frac{1}{30} z_1^0 z_1^1 z_3^3 z_4^0 z_5^5 z_6^1 - \frac{1}{6} z_1^0 z_1^1 z_3^3 z_4^0 z_5^4 z_6^2 + \frac{1}{30} z_1^0 z_1^1 z_3^3 z_4^1 z_5^0 z_6^5 - \frac{1}{6} z_1^0 z_1^1 z_3^3 z_4^1 z_5^1 z_6^4 + \frac{1}{3} z_1^0 z_1^1 z_3^3 z_4^1 z_5^2 z_6^3 \\
& - \frac{1}{3} z_1^0 z_1^1 z_3^3 z_4^1 z_5^3 z_6^2 + \frac{1}{6} z_1^0 z_1^1 z_3^3 z_4^1 z_5^4 z_6^1 - \frac{1}{30} z_1^0 z_1^1 z_3^3 z_4^1 z_5^5 z_6^0
\end{aligned}
$$

$$\begin{aligned}
\widehat{\mathbf{q}}_5 =\ & \frac{3}{16}z_1^0 z_2^1 z_3^0 z_4^0 z_5^3 z_6^6 + \frac{3}{16}z_1^0 z_2^1 z_3^0 z_4^0 z_5^5 z_6^4 - \frac{3}{8}z_1^0 z_2^1 z_3^0 z_4^0 z_5^4 z_6^5 - \frac{1}{4}z_1^0 z_2^1 z_3^0 z_4^1 z_5^2 z_6^6 + \frac{3}{4}z_1^0 z_2^1 z_3^0 z_4^1 z_5^4 z_6^4 \\
& - \frac{1}{2}z_1^0 z_2^1 z_3^0 z_4^1 z_5^5 z_6^3 - \frac{1}{16}z_1^0 z_2^1 z_3^0 z_4^2 z_5^1 z_6^6 + z_1^0 z_2^1 z_3^0 z_4^2 z_5^2 z_6^5 - \frac{3}{2}z_1^0 z_2^1 z_3^0 z_4^2 z_5^3 z_6^4 + \frac{1}{4}z_1^0 z_2^1 z_3^0 z_4^2 z_5^4 z_6^3 \\
& + \frac{5}{16}z_1^0 z_2^1 z_3^0 z_4^2 z_5^5 z_6^2 + \frac{13}{120}z_1^0 z_2^1 z_3^0 z_4^3 z_5^0 z_6^6 - \frac{5}{12}z_1^0 z_2^1 z_3^0 z_4^3 z_5^1 z_6^5 - \frac{1}{6}z_1^0 z_2^1 z_3^0 z_4^3 z_5^2 z_6^4 + \frac{7}{6}z_1^0 z_2^1 z_3^0 z_4^3 z_5^3 z_6^3 \\
& - \frac{17}{24}z_1^0 z_2^1 z_3^0 z_4^3 z_5^4 z_6^2 - \frac{13}{120}z_1^0 z_2^1 z_3^0 z_4^4 z_5^0 z_6^5 + \frac{1}{60}z_1^0 z_2^1 z_3^0 z_4^3 z_5^5 z_6^1 + \frac{23}{48}z_1^0 z_2^1 z_3^0 z_4^4 z_5^1 z_6^4 - \frac{7}{12}z_1^0 z_2^1 z_3^0 z_4^4 z_5^2 z_6^3 \\
& + \frac{1}{12}z_1^0 z_2^1 z_3^0 z_4^4 z_5^4 z_6^1 + \frac{7}{48}z_1^0 z_2^1 z_3^0 z_4^4 z_5^3 z_6^2 - \frac{1}{60}z_1^0 z_2^1 z_3^0 z_4^4 z_5^5 z_6^0 - \frac{5}{16}z_1^0 z_2^1 z_3^1 z_4^0 z_5^2 z_6^6 + \frac{3}{8}z_1^0 z_2^1 z_3^1 z_4^0 z_5^3 z_6^5 \\
& + \frac{3}{16}z_1^0 z_2^1 z_3^1 z_4^0 z_5^4 z_6^4 - \frac{1}{4}z_1^0 z_2^1 z_3^1 z_4^0 z_5^5 z_6^3 + \frac{5}{8}z_1^0 z_2^1 z_3^1 z_4^1 z_5^1 z_6^6 - \frac{1}{2}z_1^0 z_2^1 z_3^1 z_4^1 z_5^2 z_6^5 - z_1^0 z_2^1 z_3^1 z_4^1 z_5^4 z_6^3 \\
& - \frac{21}{80}z_1^0 z_2^1 z_3^1 z_4^2 z_5^0 z_6^6 + \frac{7}{8}z_1^0 z_2^1 z_3^1 z_4^1 z_5^5 z_6^2 - \frac{3}{8}z_1^0 z_2^1 z_3^1 z_4^2 z_5^1 z_6^5 + \frac{3}{2}z_1^0 z_2^1 z_3^1 z_4^2 z_5^3 z_6^3 - \frac{3}{16}z_1^0 z_2^1 z_3^1 z_4^2 z_5^4 z_6^2 \\
& - \frac{27}{40}z_1^0 z_2^1 z_3^1 z_4^2 z_5^5 z_6^1 + \frac{1}{5}z_1^0 z_2^1 z_3^1 z_4^3 z_5^0 z_6^5 - \frac{1}{2}z_1^0 z_2^1 z_3^1 z_4^3 z_5^2 z_6^3 + \frac{1}{2}z_1^0 z_2^1 z_3^1 z_4^3 z_5^1 z_6^4 - \frac{5}{4}z_1^0 z_2^1 z_3^1 z_4^3 z_5^3 z_6^2 \\
& + z_1^0 z_2^1 z_3^1 z_4^3 z_5^4 z_6^1 + \frac{1}{20}z_1^0 z_2^1 z_3^1 z_4^3 z_5^5 z_6^0 + \frac{1}{16}z_1^0 z_2^1 z_3^1 z_4^4 z_5^0 z_6^4 - \frac{3}{4}z_1^0 z_2^1 z_3^1 z_4^4 z_5^1 z_6^3 + \frac{21}{16}z_1^0 z_2^1 z_3^1 z_4^4 z_5^2 z_6^2 \\
& - \frac{5}{8}z_1^0 z_2^1 z_3^1 z_4^4 z_5^3 z_6^1 + \frac{5}{8}z_1^0 z_2^1 z_3^2 z_4^0 z_5^2 z_6^5 - \frac{21}{16}z_1^0 z_2^1 z_3^2 z_4^0 z_5^3 z_6^4 + \frac{3}{4}z_1^0 z_2^1 z_3^2 z_4^0 z_5^4 z_6^3 - \frac{1}{16}z_1^0 z_2^1 z_3^2 z_4^0 z_5^5 z_6^2 \\
& - \frac{1}{20}z_1^0 z_2^1 z_3^2 z_4^1 z_5^0 z_6^6 - z_1^0 z_2^1 z_3^2 z_4^1 z_5^1 z_6^5 + \frac{5}{4}z_1^0 z_2^1 z_3^2 z_4^1 z_5^2 z_6^4 + \frac{1}{2}z_1^0 z_2^1 z_3^2 z_4^1 z_5^3 z_6^3 - \frac{1}{2}z_1^0 z_2^1 z_3^2 z_4^1 z_5^4 z_6^2 \\
& - \frac{1}{5}z_1^0 z_2^1 z_3^2 z_4^1 z_5^5 z_6^1 + \frac{27}{40}z_1^0 z_2^1 z_3^2 z_4^2 z_5^0 z_6^5 + \frac{3}{16}z_1^0 z_2^1 z_3^2 z_4^2 z_5^1 z_6^4 - \frac{3}{2}z_1^0 z_2^1 z_3^2 z_4^2 z_5^2 z_6^3 + \frac{3}{8}z_1^0 z_2^1 z_3^2 z_4^2 z_5^4 z_6^1 \\
& + \frac{21}{80}z_1^0 z_2^1 z_3^2 z_4^2 z_5^5 z_6^0 - \frac{7}{8}z_1^0 z_2^1 z_3^2 z_4^3 z_5^0 z_6^4 + z_1^0 z_2^1 z_3^2 z_4^3 z_5^1 z_6^3 + \frac{1}{2}z_1^0 z_2^1 z_3^2 z_4^3 z_5^3 z_6^1 - \frac{5}{8}z_1^0 z_2^1 z_3^2 z_4^3 z_5^4 z_6^0 \\
& + \frac{1}{4}z_1^0 z_2^1 z_3^2 z_4^4 z_5^0 z_6^3 - \frac{3}{16}z_1^0 z_2^1 z_3^2 z_4^4 z_5^1 z_6^2 - \frac{3}{8}z_1^0 z_2^1 z_3^2 z_4^4 z_5^2 z_6^1 + \frac{5}{16}z_1^0 z_2^1 z_3^2 z_4^4 z_5^3 z_6^0 + \frac{1}{60}z_1^0 z_2^1 z_3^3 z_4^0 z_5^0 z_6^6 \\
& - \frac{1}{12}z_1^0 z_2^1 z_3^3 z_4^0 z_5^1 z_6^5 - \frac{7}{48}z_1^0 z_2^1 z_3^3 z_4^0 z_5^2 z_6^4 + \frac{7}{12}z_1^0 z_2^1 z_3^3 z_4^0 z_5^3 z_6^3 + \frac{13}{120}z_1^0 z_2^1 z_3^3 z_4^0 z_5^5 z_6^1 - \frac{23}{48}z_1^0 z_2^1 z_3^3 z_4^0 z_5^4 z_6^2 \\
& - \frac{1}{60}z_1^0 z_2^1 z_3^3 z_4^1 z_5^0 z_6^5 + \frac{17}{24}z_1^0 z_2^1 z_3^3 z_4^1 z_5^1 z_6^4 - \frac{7}{6}z_1^0 z_2^1 z_3^3 z_4^1 z_5^2 z_6^3 + \frac{1}{6}z_1^0 z_2^1 z_3^3 z_4^1 z_5^3 z_6^2 + \frac{5}{12}z_1^0 z_2^1 z_3^3 z_4^1 z_5^4 z_6^1 \\
& - \frac{13}{120}z_1^0 z_2^1 z_3^3 z_4^1 z_5^5 z_6^0 - \frac{5}{16}z_1^0 z_2^1 z_3^3 z_4^2 z_5^0 z_6^4 - \frac{1}{4}z_1^0 z_2^1 z_3^3 z_4^2 z_5^1 z_6^3 + \frac{3}{2}z_1^0 z_2^1 z_3^3 z_4^2 z_5^2 z_6^2 - z_1^0 z_2^1 z_3^3 z_4^2 z_5^3 z_6^1 \\
& + \frac{1}{16}z_1^0 z_2^1 z_3^3 z_4^2 z_5^4 z_6^0 - \frac{3}{4}z_1^0 z_2^1 z_3^3 z_4^3 z_5^1 z_6^2 + \frac{1}{2}z_1^0 z_2^1 z_3^3 z_4^3 z_5^0 z_6^3 + \frac{1}{4}z_1^0 z_2^1 z_3^3 z_4^3 z_5^3 z_6^0 - \frac{3}{16}z_1^0 z_2^1 z_3^3 z_4^4 z_5^2 z_6^0 \\
& - \frac{3}{16}z_1^0 z_2^1 z_3^3 z_4^4 z_5^0 z_6^2 + \frac{3}{8}z_1^0 z_2^1 z_3^3 z_4^4 z_5^1 z_6^1
\end{aligned}$$

$$\widehat{\mathbf{q}}_6 = \frac{1}{8}z_1^0 z_1^1 z_3^0 z_4^0 z_5^3 z_6^6 + \frac{1}{8}z_1^0 z_1^1 z_3^0 z_4^0 z_5^5 z_6^4 - \frac{1}{4}z_1^0 z_1^1 z_3^0 z_4^0 z_5^4 z_6^5 - \frac{1}{6}z_1^0 z_1^1 z_3^0 z_4^1 z_5^2 z_6^6 + \frac{1}{2}z_1^0 z_1^1 z_3^0 z_4^1 z_5^4 z_6^4$$

$$-\frac{1}{3}z_1^0 z_1^1 z_3^0 z_4^1 z_5^5 z_6^3 + \frac{1}{24}z_1^0 z_1^1 z_3^0 z_4^2 z_5^1 z_6^6 + \frac{1}{3}z_1^0 z_1^1 z_3^0 z_4^2 z_5^2 z_6^5 - \frac{1}{2}z_1^0 z_1^1 z_3^0 z_4^2 z_5^3 z_6^4 - \frac{1}{6}z_1^0 z_1^1 z_3^0 z_4^2 z_5^4 z_6^3$$

$$+\frac{7}{24}z_1^0 z_1^1 z_3^0 z_4^2 z_5^5 z_6^2 + \frac{1}{90}z_1^0 z_1^1 z_3^0 z_4^3 z_5^0 z_6^6 - \frac{5}{36}z_1^0 z_1^1 z_3^0 z_4^3 z_5^1 z_6^5 - \frac{1}{18}z_1^0 z_1^1 z_3^0 z_4^3 z_5^2 z_6^4 + \frac{7}{18}z_1^0 z_1^1 z_3^0 z_4^3 z_5^3 z_6^3$$

$$-\frac{1}{9}z_1^0 z_1^1 z_3^0 z_4^3 z_5^4 z_6^2 - \frac{1}{90}z_1^0 z_1^1 z_3^0 z_4^4 z_5^0 z_6^5 - \frac{17}{180}z_1^0 z_1^1 z_3^0 z_4^3 z_5^5 z_6^1 + \frac{7}{72}z_1^0 z_1^1 z_3^0 z_4^4 z_5^1 z_6^4 - \frac{1}{9}z_1^0 z_1^1 z_3^0 z_4^4 z_5^2 z_6^3$$

$$+\frac{1}{36}z_1^0 z_1^1 z_3^0 z_4^4 z_5^4 z_6^1 - \frac{1}{72}z_1^0 z_1^1 z_3^0 z_4^4 z_5^3 z_6^2 + \frac{1}{90}z_1^0 z_1^1 z_3^0 z_4^4 z_5^5 z_6^0 - \frac{5}{24}z_1^0 z_1^1 z_3^1 z_4^0 z_5^2 z_6^6 + \frac{1}{4}z_1^0 z_1^1 z_3^1 z_4^0 z_5^3 z_6^5$$

$$+\frac{1}{8}z_1^0 z_1^1 z_3^1 z_4^0 z_5^4 z_6^4 - \frac{1}{6}z_1^0 z_1^1 z_3^1 z_4^0 z_5^5 z_6^3 + \frac{1}{4}z_1^0 z_1^1 z_3^1 z_4^1 z_5^1 z_6^6 + \frac{1}{3}z_1^0 z_1^1 z_3^1 z_4^1 z_5^2 z_6^5 - z_1^0 z_1^1 z_3^1 z_4^1 z_5^3 z_6^4$$

$$-\frac{3}{40}z_1^0 z_1^1 z_3^1 z_4^2 z_5^0 z_6^6 + \frac{5}{12}z_1^0 z_1^1 z_3^1 z_4^1 z_5^5 z_6^2 - \frac{1}{2}z_1^0 z_1^1 z_3^1 z_4^2 z_5^1 z_6^5 + \frac{3}{2}z_1^0 z_1^1 z_3^1 z_4^2 z_5^3 z_6^3 - \frac{5}{8}z_1^0 z_1^1 z_3^1 z_4^2 z_5^4 z_6^2$$

$$-\frac{3}{10}z_1^0 z_1^1 z_3^1 z_4^2 z_5^5 z_6^1 + \frac{7}{60}z_1^0 z_1^1 z_3^1 z_4^3 z_5^0 z_6^5 - \frac{1}{2}z_1^0 z_1^1 z_3^1 z_4^3 z_5^2 z_6^3 + \frac{5}{12}z_1^0 z_1^1 z_3^1 z_4^3 z_5^1 z_6^4 - \frac{2}{3}z_1^0 z_1^1 z_3^1 z_4^3 z_5^3 z_6^2$$

$$+\frac{7}{12}z_1^0 z_1^1 z_3^1 z_4^3 z_5^4 z_6^1 + \frac{1}{20}z_1^0 z_1^1 z_3^1 z_4^3 z_5^5 z_6^0 - \frac{1}{24}z_1^0 z_1^1 z_3^1 z_4^4 z_5^0 z_6^4 - \frac{1}{6}z_1^0 z_1^1 z_3^1 z_4^4 z_5^1 z_6^3 + \frac{3}{8}z_1^0 z_1^1 z_3^1 z_4^4 z_5^2 z_6^2$$

$$-\frac{1}{12}z_1^0 z_1^1 z_3^1 z_4^4 z_5^3 z_6^1 - \frac{1}{12}z_1^0 z_1^1 z_3^1 z_4^4 z_5^4 z_6^0 + \frac{1}{12}z_1^0 z_1^1 z_3^2 z_4^0 z_5^1 z_6^6 + \frac{1}{12}z_1^0 z_1^1 z_3^2 z_4^0 z_5^2 z_6^5 - \frac{3}{8}z_1^0 z_1^1 z_3^2 z_4^0 z_5^3 z_6^4$$

$$+\frac{1}{6}z_1^0 z_1^1 z_3^2 z_4^0 z_5^4 z_6^3 + \frac{1}{24}z_1^0 z_1^1 z_3^2 z_4^0 z_5^5 z_6^2 - \frac{1}{20}z_1^0 z_1^1 z_3^2 z_4^1 z_5^0 z_6^6 - \frac{7}{12}z_1^0 z_1^1 z_3^2 z_4^1 z_5^1 z_6^5 + \frac{2}{3}z_1^0 z_1^1 z_3^2 z_4^1 z_5^2 z_6^4$$

$$+\frac{1}{2}z_1^0 z_1^1 z_3^2 z_4^1 z_5^3 z_6^3 - \frac{5}{12}z_1^0 z_1^1 z_3^2 z_4^1 z_5^4 z_6^2 - \frac{7}{60}z_1^0 z_1^1 z_3^2 z_4^1 z_5^5 z_6^1 + \frac{3}{10}z_1^0 z_1^1 z_3^2 z_4^2 z_5^0 z_6^5 + \frac{5}{8}z_1^0 z_1^1 z_3^2 z_4^2 z_5^1 z_6^4$$

$$-\frac{3}{2}z_1^0 z_1^1 z_3^2 z_4^2 z_5^2 z_6^3 + \frac{1}{2}z_1^0 z_1^1 z_3^2 z_4^2 z_5^4 z_6^1 + \frac{3}{40}z_1^0 z_1^1 z_3^2 z_4^2 z_5^5 z_6^0 - \frac{5}{12}z_1^0 z_1^1 z_3^2 z_4^3 z_5^0 z_6^4 + z_1^0 z_1^1 z_3^2 z_4^3 z_5^2 z_6^2$$

$$-\frac{1}{3}z_1^0 z_1^1 z_3^2 z_4^3 z_5^3 z_6^1 - \frac{1}{4}z_1^0 z_1^1 z_3^2 z_4^3 z_5^4 z_6^0 + \frac{1}{6}z_1^0 z_1^1 z_3^2 z_4^4 z_5^0 z_6^3 - \frac{1}{8}z_1^0 z_1^1 z_3^2 z_4^4 z_5^1 z_6^2 - \frac{1}{4}z_1^0 z_1^1 z_3^2 z_4^4 z_5^2 z_6^1$$

$$+\frac{5}{24}z_1^0 z_1^1 z_3^2 z_4^4 z_5^3 z_6^0 - \frac{1}{90}z_1^0 z_1^1 z_3^3 z_4^0 z_5^0 z_6^6 - \frac{1}{36}z_1^0 z_1^1 z_3^3 z_4^0 z_5^1 z_6^5 + \frac{1}{72}z_1^0 z_1^1 z_3^3 z_4^0 z_5^2 z_6^4 + \frac{1}{9}z_1^0 z_1^1 z_3^3 z_4^0 z_5^3 z_6^3$$

$$+\frac{1}{90}z_1^0 z_1^1 z_3^3 z_4^0 z_5^5 z_6^1 - \frac{7}{72}z_1^0 z_1^1 z_3^3 z_4^0 z_5^4 z_6^2 + \frac{17}{180}z_1^0 z_1^1 z_3^3 z_4^1 z_5^0 z_6^5 + \frac{1}{9}z_1^0 z_1^1 z_3^3 z_4^1 z_5^1 z_6^4 - \frac{7}{18}z_1^0 z_1^1 z_3^3 z_4^1 z_5^2 z_6^3$$

$$+\frac{1}{18}z_1^0 z_1^1 z_3^3 z_4^1 z_5^3 z_6^2 + \frac{5}{36}z_1^0 z_1^1 z_3^3 z_4^1 z_5^4 z_6^1 - \frac{1}{90}z_1^0 z_1^1 z_3^3 z_4^1 z_5^5 z_6^0 - \frac{7}{24}z_1^0 z_1^1 z_3^3 z_4^2 z_5^0 z_6^4 + \frac{1}{6}z_1^0 z_1^1 z_3^3 z_4^2 z_5^1 z_6^3$$

$$+\frac{1}{2}z_1^0 z_1^1 z_3^3 z_4^2 z_5^2 z_6^2 - \frac{1}{3}z_1^0 z_1^1 z_3^3 z_4^2 z_5^3 z_6^1 - \frac{1}{24}z_1^0 z_1^1 z_3^3 z_4^2 z_5^4 z_6^0 - \frac{1}{2}z_1^0 z_1^1 z_3^3 z_4^3 z_5^1 z_6^2 + \frac{1}{3}z_1^0 z_1^1 z_3^3 z_4^3 z_5^0 z_6^3$$

$$+\frac{1}{6}z_1^0 z_1^1 z_3^3 z_4^3 z_5^3 z_6^0 - \frac{1}{8}z_1^0 z_1^1 z_3^3 z_4^4 z_5^2 z_6^0 - \frac{1}{8}z_1^0 z_1^1 z_3^3 z_4^4 z_5^0 z_6^2 + \frac{1}{4}z_1^0 z_1^1 z_3^3 z_4^4 z_5^1 z_6^1$$

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$$\widehat{\mathbf{q}}_7 = \frac{1}{16}z_1^0z_1^1z_3^0z_4^0z_5^3z_6^6 + \frac{1}{16}z_1^0z_1^1z_3^0z_4^0z_5^5z_6^4 - \frac{1}{8}z_1^0z_1^1z_3^0z_4^0z_5^4z_6^5 + \frac{1}{4}z_1^0z_1^1z_3^0z_4^1z_5^2z_6^6 - z_1^0z_1^1z_3^0z_4^1z_5^3z_6^5$$

$$+ \frac{5}{4}z_1^0z_1^1z_3^0z_4^1z_5^4z_6^4 - \frac{1}{2}z_1^0z_1^1z_3^0z_4^1z_5^5z_6^3 - \frac{7}{16}z_1^0z_1^1z_3^0z_4^2z_5^1z_6^6 + z_1^0z_1^1z_3^0z_4^2z_5^2z_6^5 - \frac{5}{4}z_1^0z_1^1z_3^0z_4^2z_5^4z_6^3$$

$$+ \frac{11}{16}z_1^0z_1^1z_3^0z_4^2z_5^5z_6^2 + \frac{13}{120}z_1^0z_1^1z_3^0z_4^3z_5^0z_6^6 + \frac{1}{3}z_1^0z_1^1z_3^0z_4^3z_5^1z_6^5 - \frac{5}{3}z_1^0z_1^1z_3^0z_4^3z_5^2z_6^4 + \frac{5}{3}z_1^0z_1^1z_3^0z_4^3z_5^3z_6^3$$

$$- \frac{5}{24}z_1^0z_1^1z_3^0z_4^3z_5^4z_6^2 - \frac{13}{120}z_1^0z_1^1z_3^0z_4^4z_5^0z_6^5 - \frac{7}{30}z_1^0z_1^1z_3^0z_4^3z_5^5z_6^1 + \frac{5}{48}z_1^0z_1^1z_3^0z_4^4z_5^1z_6^4 + \frac{5}{12}z_1^0z_1^1z_3^0z_4^4z_5^2z_6^3$$

$$+ \frac{1}{3}z_1^0z_1^1z_3^0z_4^4z_5^4z_6^1 - \frac{35}{48}z_1^0z_1^1z_3^0z_4^4z_5^3z_6^2 - \frac{1}{60}z_1^0z_1^1z_3^0z_4^4z_5^5z_6^0 - \frac{7}{16}z_1^0z_1^1z_3^1z_4^0z_5^2z_6^6 + \frac{9}{8}z_1^0z_1^1z_3^1z_4^0z_5^3z_6^5$$

$$- \frac{15}{16}z_1^0z_1^1z_3^1z_4^0z_5^4z_6^4 + \frac{1}{4}z_1^0z_1^1z_3^1z_4^0z_5^5z_6^3 + \frac{3}{8}z_1^0z_1^1z_3^1z_4^1z_5^1z_6^6 - \frac{1}{2}z_1^0z_1^1z_3^1z_4^1z_5^2z_6^5 + \frac{9}{80}z_1^0z_1^1z_3^1z_4^2z_5^0z_6^6$$

$$+ \frac{1}{8}z_1^0z_1^1z_3^1z_4^1z_5^5z_6^2 - \frac{3}{8}z_1^0z_1^1z_3^1z_4^2z_5^1z_6^5 + \frac{15}{16}z_1^0z_1^1z_3^1z_4^2z_5^4z_6^2 - \frac{27}{40}z_1^0z_1^1z_3^1z_4^2z_5^5z_6^1 - \frac{11}{20}z_1^0z_1^1z_3^1z_4^3z_5^0z_6^5$$

$$+ \frac{5}{4}z_1^0z_1^1z_3^1z_4^3z_5^1z_6^4 - \frac{5}{4}z_1^0z_1^1z_3^1z_4^3z_5^3z_6^2 + \frac{1}{4}z_1^0z_1^1z_3^1z_4^3z_5^4z_6^1 + \frac{3}{10}z_1^0z_1^1z_3^1z_4^3z_5^5z_6^0 + \frac{7}{16}z_1^0z_1^1z_3^1z_4^4z_5^0z_6^4$$

$$- \frac{5}{4}z_1^0z_1^1z_3^1z_4^4z_5^1z_6^3 + \frac{15}{16}z_1^0z_1^1z_3^1z_4^4z_5^2z_6^2 + \frac{1}{8}z_1^0z_1^1z_3^1z_4^4z_5^3z_6^1 - \frac{1}{4}z_1^0z_1^1z_3^1z_4^4z_5^4z_6^0 + \frac{1}{4}z_1^0z_1^2z_3^0z_4^0z_5^1z_6^6$$

$$- \frac{1}{8}z_1^0z_1^1z_3^2z_4^0z_5^2z_6^5 - \frac{15}{16}z_1^0z_1^1z_3^2z_4^0z_5^3z_6^4 + \frac{5}{4}z_1^0z_1^1z_3^2z_4^0z_5^4z_6^3 - \frac{7}{16}z_1^0z_1^1z_3^2z_4^0z_5^5z_6^2 - \frac{3}{10}z_1^0z_1^1z_3^2z_4^1z_5^0z_6^6$$

$$- \frac{1}{4}z_1^0z_1^1z_3^2z_4^1z_5^1z_6^5 + \frac{5}{4}z_1^0z_1^1z_3^2z_4^1z_5^2z_6^4 - \frac{5}{4}z_1^0z_1^1z_3^2z_4^1z_5^4z_6^2 + \frac{11}{20}z_1^0z_1^1z_3^2z_4^1z_5^5z_6^1 + \frac{27}{40}z_1^0z_1^1z_3^2z_4^2z_5^0z_6^5$$

$$- \frac{15}{16}z_1^0z_1^1z_3^2z_4^2z_5^1z_6^4 + \frac{3}{8}z_1^0z_1^1z_3^2z_4^2z_5^4z_6^1 - \frac{9}{80}z_1^0z_1^1z_3^2z_4^2z_5^5z_6^0 - \frac{1}{8}z_1^0z_1^1z_3^2z_4^3z_5^0z_6^4 + \frac{1}{2}z_1^0z_1^1z_3^2z_4^3z_5^3z_6^1$$

$$- \frac{3}{8}z_1^0z_1^1z_3^2z_4^3z_5^4z_6^0 - \frac{1}{4}z_1^0z_1^1z_3^2z_4^4z_5^0z_6^3 + \frac{15}{16}z_1^0z_1^1z_3^2z_4^4z_5^1z_6^2 - \frac{9}{8}z_1^0z_1^1z_3^2z_4^4z_5^2z_6^1 + \frac{7}{16}z_1^0z_1^1z_3^2z_4^4z_5^3z_6^0$$

$$+ \frac{1}{60}z_1^0z_1^1z_3^3z_4^0z_5^0z_6^6 - \frac{1}{3}z_1^0z_1^1z_3^3z_4^0z_5^1z_6^5 + \frac{35}{48}z_1^0z_1^1z_3^3z_4^0z_5^2z_6^4 - \frac{5}{12}z_1^0z_1^1z_3^3z_4^0z_5^3z_6^3 + \frac{13}{120}z_1^0z_1^1z_3^3z_4^0z_5^5z_6^1$$

$$- \frac{5}{48}z_1^0z_1^1z_3^3z_4^0z_5^4z_6^2 + \frac{7}{30}z_1^0z_1^1z_3^3z_4^1z_5^0z_6^5 + \frac{5}{24}z_1^0z_1^1z_3^3z_4^1z_5^1z_6^4 - \frac{5}{3}z_1^0z_1^1z_3^3z_4^1z_5^2z_6^3 + \frac{5}{3}z_1^0z_1^1z_3^3z_4^1z_5^3z_6^2$$

$$- \frac{1}{3}z_1^0z_1^1z_3^3z_4^1z_5^4z_6^1 - \frac{13}{120}z_1^0z_1^1z_3^3z_4^1z_5^5z_6^0 - \frac{11}{16}z_1^0z_1^1z_3^3z_4^2z_5^0z_6^4 + \frac{5}{4}z_1^0z_1^1z_3^3z_4^2z_5^1z_6^3 - z_1^0z_1^1z_3^3z_4^2z_5^3z_6^1$$

$$+ \frac{7}{16}z_1^0z_1^1z_3^3z_4^2z_5^4z_6^0 - \frac{5}{4}z_1^0z_1^1z_3^3z_4^3z_5^1z_6^2 + \frac{1}{2}z_1^0z_1^1z_3^3z_4^3z_5^0z_6^3 + z_1^0z_1^1z_3^3z_4^3z_5^2z_6^1 - \frac{1}{4}z_1^0z_1^1z_3^3z_4^3z_5^3z_6^0$$

$$- \frac{1}{16}z_1^0z_1^1z_3^3z_4^4z_5^2z_6^0 - \frac{1}{16}z_1^0z_1^1z_3^3z_4^4z_5^0z_6^2 + \frac{1}{8}z_1^0z_1^1z_3^3z_4^4z_5^1z_6^1$$

$$\widehat{\mathbf{q}}_8 = z_1^0z_1^1z_3^3z_5^0z_5^2z_5^4 + z_1^0z_1^1z_3^0z_5^1z_5^3z_5^5 - \frac{2}{5}z_1^0z_1^1z_3^0z_5^0z_5^4z_5^5 - 4z_1^0z_1^1z_3^0z_5^2z_5^3z_5^4 + \frac{3}{5}z_1^0z_1^1z_3^1z_5^0z_5^3z_5^5$$

$$- 3z_1^0z_1^1z_3^1z_5^1z_5^2z_5^5 + 3z_1^0z_1^1z_3^1z_5^1z_5^3z_5^4 + \frac{3}{5}z_1^0z_1^1z_3^2z_5^0z_5^2z_5^5 - 3z_1^0z_1^1z_3^2z_5^0z_5^3z_5^4 + 3z_1^0z_1^1z_3^2z_5^1z_5^2z_5^4$$

$$- \frac{2}{5}z_1^0z_1^1z_3^3z_5^0z_5^1z_5^5 - 4z_1^0z_1^1z_3^3z_5^1z_5^2z_5^3$$

$$\widehat{\mathbf{q}}_9 = z_1^0z_1^1z_4^0z_4^2z_4^4z_6^3 + z_1^0z_1^1z_4^0z_4^1z_4^3z_6^5 + z_1^0z_1^1z_4^1z_4^3z_4^4z_6^1 - \frac{1}{2}z_1^0z_1^1z_4^0z_4^1z_4^2z_6^6 - \frac{1}{2}z_1^0z_1^1z_4^0z_4^1z_4^4z_6^4$$

$$- \frac{3}{2}z_1^0z_1^1z_4^0z_4^2z_4^3z_6^4 - \frac{1}{2}z_1^0z_1^1z_4^0z_4^3z_4^4z_6^2 + 2z_1^0z_1^1z_4^1z_4^2z_4^3z_6^3 - \frac{3}{2}z_1^0z_1^1z_4^1z_4^2z_4^4z_6^2 - \frac{1}{2}z_1^0z_1^1z_4^2z_4^3z_4^4z_6^0$$

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$$\widehat{\mathbf{q}}_{10} = -\frac{2}{3}z_1^0 z_3^0 z_3^1 z_3^2 z_4^1 z_6^6 + \frac{2}{3}z_1^0 z_3^0 z_3^1 z_3^2 z_4^4 z_6^3 + 2z_1^0 z_3^0 z_3^1 z_3^2 z_4^2 z_6^5 - 2z_1^0 z_3^0 z_3^1 z_3^2 z_4^3 z_6^4 + \frac{1}{4}z_1^0 z_3^0 z_3^1 z_3^3 z_4^0 z_6^6$$

$$- \frac{1}{3}z_1^0 z_3^0 z_3^1 z_3^3 z_4^1 z_6^5 - \frac{1}{2}z_1^0 z_3^0 z_3^1 z_3^3 z_4^2 z_6^4 + z_1^0 z_3^0 z_3^1 z_3^3 z_4^3 z_6^3 - \frac{5}{12}z_1^0 z_3^0 z_3^1 z_3^3 z_4^4 z_6^2 - \frac{1}{2}z_1^0 z_3^0 z_3^2 z_3^3 z_4^0 z_6^5$$

$$+ \frac{4}{3}z_1^0 z_3^0 z_3^2 z_3^3 z_4^1 z_6^4 - z_1^0 z_3^0 z_3^2 z_3^3 z_4^2 z_6^3 + \frac{1}{6}z_1^0 z_3^0 z_3^2 z_3^3 z_4^4 z_6^1 + \frac{3}{4}z_1^0 z_3^1 z_3^2 z_3^3 z_4^0 z_6^4 - \frac{7}{3}z_1^0 z_3^1 z_3^2 z_3^3 z_4^1 z_6^3$$

$$+ \frac{5}{2}z_1^0 z_3^1 z_3^2 z_3^3 z_4^2 z_6^2 - z_1^0 z_3^1 z_3^2 z_3^3 z_4^3 z_6^1 + \frac{1}{12}z_1^0 z_3^1 z_3^2 z_3^3 z_4^4 z_6^0 - \frac{1}{12}z_1^1 z_3^0 z_3^1 z_3^2 z_4^0 z_6^6 + z_1^1 z_3^0 z_3^1 z_3^2 z_4^1 z_6^5$$

$$- \frac{5}{2}z_1^1 z_3^0 z_3^1 z_3^2 z_4^2 z_6^4 - \frac{3}{4}z_1^1 z_3^0 z_3^1 z_3^2 z_4^4 z_6^2 + \frac{7}{3}z_1^1 z_3^0 z_3^1 z_3^2 z_4^3 z_6^3 - \frac{1}{6}z_1^1 z_3^0 z_3^1 z_3^3 z_4^0 z_6^5 - \frac{4}{3}z_1^1 z_3^0 z_3^1 z_3^3 z_4^3 z_6^2$$

$$+ z_1^1 z_3^0 z_3^1 z_3^3 z_4^2 z_6^3 + \frac{5}{12}z_1^1 z_3^0 z_3^2 z_3^3 z_4^0 z_6^4 + \frac{1}{2}z_1^1 z_3^0 z_3^1 z_3^3 z_4^4 z_6^1 - z_1^1 z_3^0 z_3^2 z_3^3 z_4^1 z_6^3 + \frac{1}{2}z_1^1 z_3^0 z_3^2 z_3^3 z_4^2 z_6^2$$

$$+ \frac{1}{3}z_1^1 z_3^0 z_3^2 z_3^3 z_4^3 z_6^1 - \frac{1}{4}z_1^1 z_3^0 z_3^2 z_3^3 z_4^4 z_6^0 - \frac{2}{3}z_1^1 z_3^1 z_3^2 z_3^3 z_4^0 z_6^3 + 2z_1^1 z_3^1 z_3^2 z_3^3 z_4^1 z_6^2 - 2z_1^1 z_3^1 z_3^2 z_3^3 z_4^2 z_6^1$$

$$+ \frac{2}{3}z_1^1 z_3^1 z_3^2 z_3^3 z_4^3 z_6^0$$

$$\widehat{\mathbf{q}}_{11} = -\frac{1}{3}z_1^0 z_3^0 z_3^1 z_3^2 z_4^1 z_6^6 + \frac{1}{3}z_1^0 z_3^0 z_3^1 z_3^2 z_4^4 z_6^3 + z_1^0 z_3^0 z_3^1 z_3^2 z_4^2 z_6^5 - z_1^0 z_3^0 z_3^1 z_3^2 z_4^3 z_6^4 + \frac{1}{4}z_1^0 z_3^0 z_3^1 z_3^3 z_4^0 z_6^6$$

$$- \frac{2}{3}z_1^0 z_3^0 z_3^1 z_3^3 z_4^1 z_6^5 + \frac{1}{2}z_1^0 z_3^0 z_3^1 z_3^3 z_4^2 z_6^4 - \frac{1}{12}z_1^0 z_3^0 z_3^1 z_3^3 z_4^4 z_6^2 - \frac{1}{2}z_1^0 z_3^0 z_3^2 z_3^3 z_4^0 z_6^5 + \frac{5}{3}z_1^0 z_3^0 z_3^2 z_3^3 z_4^1 z_6^4$$

$$- 2z_1^0 z_3^0 z_3^2 z_3^3 z_4^2 z_6^3 + z_1^0 z_3^0 z_3^2 z_3^3 z_4^3 z_6^2 - \frac{1}{6}z_1^0 z_3^0 z_3^2 z_3^3 z_4^4 z_6^1 + \frac{3}{4}z_1^0 z_3^1 z_3^2 z_3^3 z_4^0 z_6^4 - \frac{8}{3}z_1^0 z_3^1 z_3^2 z_3^3 z_4^1 z_6^3$$

$$+ \frac{7}{2}z_1^0 z_3^1 z_3^2 z_3^3 z_4^2 z_6^2 - 2z_1^0 z_3^1 z_3^2 z_3^3 z_4^3 z_6^1 + \frac{5}{12}z_1^0 z_3^1 z_3^2 z_3^3 z_4^4 z_6^0 - \frac{5}{12}z_1^1 z_3^0 z_3^1 z_3^2 z_4^0 z_6^6 + 2z_1^1 z_3^0 z_3^1 z_3^2 z_4^1 z_6^5$$

$$- \frac{7}{2}z_1^1 z_3^0 z_3^1 z_3^2 z_4^2 z_6^4 - \frac{3}{4}z_1^1 z_3^0 z_3^1 z_3^2 z_4^4 z_6^2 + \frac{8}{3}z_1^1 z_3^0 z_3^1 z_3^2 z_4^3 z_6^3 + \frac{1}{6}z_1^1 z_3^0 z_3^1 z_3^3 z_4^0 z_6^5 - z_1^1 z_3^0 z_3^1 z_3^3 z_4^1 z_6^4$$

$$- \frac{5}{3}z_1^1 z_3^0 z_3^1 z_3^3 z_4^3 z_6^2 + 2z_1^1 z_3^0 z_3^1 z_3^3 z_4^2 z_6^3 + \frac{1}{12}z_1^1 z_3^0 z_3^2 z_3^3 z_4^0 z_6^4 + \frac{1}{2}z_1^1 z_3^0 z_3^1 z_3^3 z_4^4 z_6^1 - \frac{1}{2}z_1^1 z_3^0 z_3^2 z_3^3 z_4^2 z_6^2$$

$$+ \frac{2}{3}z_1^1 z_3^0 z_3^2 z_3^3 z_4^3 z_6^1 - \frac{1}{4}z_1^1 z_3^0 z_3^2 z_3^3 z_4^4 z_6^0 - \frac{1}{3}z_1^1 z_3^1 z_3^2 z_3^3 z_4^0 z_6^3 + z_1^1 z_3^1 z_3^2 z_3^3 z_4^1 z_6^2 - z_1^1 z_3^1 z_3^2 z_3^3 z_4^2 z_6^1$$

$$+ \frac{1}{3}z_1^1 z_3^1 z_3^2 z_3^3 z_4^3 z_6^0]$$

$$\widehat{\mathbf{q}}_{12} = z_1^1 z_3^0 z_3^1 z_3^3 z_5^1 z_5^4 + z_1^0 z_3^0 z_3^2 z_3^3 z_5^0 z_5^5 + z_1^0 z_3^0 z_3^2 z_3^3 z_5^1 z_5^4 + z_1^1 z_3^0 z_3^1 z_3^3 z_5^0 z_5^5 + 6z_1^0 z_3^0 z_3^1 z_3^2 z_5^2 z_5^5$$

$$- 18z_1^0 z_3^0 z_3^1 z_3^2 z_5^3 z_5^4 - 3z_1^0 z_3^0 z_3^1 z_3^3 z_5^1 z_5^5 + 6z_1^0 z_3^0 z_3^1 z_3^3 z_5^2 z_5^4 - 8z_1^0 z_3^0 z_3^2 z_3^3 z_5^2 z_5^3 - 3z_1^0 z_3^1 z_3^2 z_3^3 z_5^0 z_5^4$$

$$+ 6z_1^0 z_3^1 z_3^2 z_3^3 z_5^1 z_5^3 - 3z_1^1 z_3^0 z_3^1 z_3^2 z_5^2 z_5^5 + 6z_1^1 z_3^0 z_3^1 z_3^2 z_5^2 z_5^4 - 8z_1^1 z_3^0 z_3^1 z_3^3 z_5^2 z_5^3 - 3z_1^1 z_3^0 z_3^2 z_3^3 z_5^0 z_5^4$$

$$+ 6z_1^1 z_3^0 z_3^2 z_3^3 z_5^1 z_5^3 + 6z_1^1 z_3^1 z_3^2 z_3^3 z_5^0 z_5^3 - 18z_1^1 z_3^1 z_3^2 z_3^3 z_5^1 z_5^2$$

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$$\widehat{\mathbf{q}}_{13} = \frac{1}{2}z_1^0 z_3^0 z_3^1 z_4^0 z_4^4 z_5^5 - 2z_1^0 z_3^0 z_3^1 z_4^1 z_4^4 z_5^4 + 3z_1^0 z_3^0 z_3^1 z_4^2 z_4^4 z_5^3 - 2z_1^0 z_3^0 z_3^1 z_4^3 z_4^4 z_5^2 - z_1^0 z_3^0 z_3^2 z_4^0 z_4^3 z_5^5$$

$$+ 4z_1^0 z_3^0 z_3^2 z_4^1 z_4^3 z_5^4 - 6z_1^0 z_3^0 z_3^2 z_4^2 z_4^3 z_5^3 + z_1^0 z_3^0 z_3^2 z_4^3 z_4^4 z_5^1 + \frac{1}{2}z_1^0 z_3^0 z_3^3 z_4^0 z_4^2 z_5^5 - 2z_1^0 z_3^0 z_3^3 z_4^1 z_4^2 z_5^4$$

$$- \frac{1}{2}z_1^0 z_3^0 z_3^3 z_4^2 z_4^4 z_5^1 + 2z_1^0 z_3^0 z_3^3 z_4^2 z_4^3 z_5^2 + \frac{3}{2}z_1^0 z_3^1 z_3^2 z_4^0 z_4^2 z_5^5 - 6z_1^0 z_3^1 z_3^2 z_4^1 z_4^2 z_5^4 + 6z_1^0 z_3^1 z_3^2 z_4^2 z_4^4 z_5^2$$

$$- \frac{3}{2}z_1^0 z_3^1 z_3^2 z_4^2 z_4^4 z_5^1 - z_1^0 z_3^1 z_3^3 z_4^0 z_4^1 z_5^5 + 6z_1^0 z_3^1 z_3^3 z_4^1 z_4^2 z_5^3 - 4z_1^0 z_3^1 z_3^3 z_4^1 z_4^3 z_5^2 + z_1^0 z_3^1 z_3^3 z_4^1 z_4^4 z_5^1$$

$$+ 2z_1^0 z_3^2 z_3^3 z_4^0 z_4^1 z_5^4 - 3z_1^0 z_3^2 z_3^3 z_4^0 z_4^2 z_5^3 + 2z_1^0 z_3^2 z_3^3 z_4^0 z_4^3 z_5^2 - \frac{1}{2}z_1^0 z_3^2 z_3^3 z_4^0 z_4^4 z_5^1 - \frac{1}{2}z_1^1 z_3^0 z_3^1 z_4^0 z_4^4 z_5^4$$

$$+ 2z_1^1 z_3^0 z_3^1 z_4^1 z_4^4 z_5^3 - 3z_1^1 z_3^0 z_3^1 z_4^2 z_4^4 z_5^2 + 2z_1^1 z_3^0 z_3^1 z_4^3 z_4^4 z_5^1 + z_1^1 z_3^0 z_3^2 z_4^0 z_4^3 z_5^4 - 4z_1^1 z_3^0 z_3^2 z_4^1 z_4^3 z_5^3$$

$$+ 6z_1^1 z_3^0 z_3^2 z_4^2 z_4^3 z_5^2 - z_1^1 z_3^0 z_3^2 z_4^3 z_4^4 z_5^0 - \frac{1}{2}z_1^1 z_3^0 z_3^3 z_4^0 z_4^2 z_5^4 + 2z_1^1 z_3^0 z_3^3 z_4^1 z_4^2 z_5^3 - 2z_1^1 z_3^0 z_3^3 z_4^2 z_4^3 z_5^1$$

$$+ \frac{1}{2}z_1^1 z_3^0 z_3^3 z_4^2 z_4^4 z_5^0 - \frac{3}{2}z_1^1 z_3^1 z_3^2 z_4^0 z_4^2 z_5^4 + 6z_1^1 z_3^1 z_3^2 z_4^1 z_4^2 z_5^3 - 6z_1^1 z_3^1 z_3^2 z_4^2 z_4^3 z_5^1 + \frac{3}{2}z_1^1 z_3^1 z_3^2 z_4^2 z_4^4 z_5^0$$

$$+ z_1^1 z_3^1 z_3^3 z_4^0 z_4^1 z_5^4 - 6z_1^1 z_3^1 z_3^3 z_4^1 z_4^2 z_5^2 + 4z_1^1 z_3^1 z_3^3 z_4^1 z_4^3 z_5^1 - z_1^1 z_3^1 z_3^3 z_4^1 z_4^4 z_5^0 - 2z_1^1 z_3^2 z_3^3 z_4^0 z_4^1 z_5^3$$

$$+ 3z_1^1 z_3^2 z_3^3 z_4^0 z_4^2 z_5^2 - 2z_1^1 z_3^2 z_3^3 z_4^0 z_4^3 z_5^1 + \frac{1}{2}z_1^1 z_3^2 z_3^3 z_4^0 z_4^4 z_5^0$$

$$\widehat{\mathbf{q}}_{14} = -\frac{1}{6}z_1^0 z_3^0 z_3^1 z_4^0 z_4^4 z_5^5 + \frac{2}{3}z_1^0 z_3^0 z_3^1 z_4^1 z_4^3 z_5^5 - 2z_1^0 z_3^0 z_3^1 z_4^2 z_4^3 z_5^4 + z_1^0 z_3^0 z_3^1 z_4^2 z_4^4 z_5^3 - \frac{2}{3}z_1^0 z_3^0 z_3^1 z_4^3 z_4^4 z_5^2$$

$$+ \frac{1}{3}z_1^0 z_3^0 z_3^2 z_4^0 z_4^4 z_5^4 - z_1^0 z_3^0 z_3^2 z_4^1 z_4^2 z_5^5 + \frac{2}{3}z_1^0 z_3^0 z_3^2 z_4^1 z_4^3 z_5^4 - z_1^0 z_3^0 z_3^2 z_4^1 z_4^4 z_5^3 + z_1^0 z_3^0 z_3^2 z_4^2 z_4^3 z_5^3$$

$$+ \frac{1}{3}z_1^0 z_3^0 z_3^2 z_4^3 z_4^4 z_5^1 + \frac{1}{6}z_1^0 z_3^0 z_3^3 z_4^0 z_4^2 z_5^5 - \frac{1}{3}z_1^0 z_3^0 z_3^3 z_4^0 z_4^3 z_5^4 + \frac{1}{3}z_1^0 z_3^0 z_3^3 z_4^1 z_4^2 z_5^4 + \frac{1}{3}z_1^0 z_3^0 z_3^3 z_4^1 z_4^4 z_5^2$$

$$- \frac{1}{6}z_1^0 z_3^0 z_3^3 z_4^2 z_4^4 z_5^1 - \frac{1}{3}z_1^0 z_3^0 z_3^3 z_4^2 z_4^3 z_5^2 - z_1^0 z_3^1 z_3^2 z_4^0 z_4^3 z_5^4 + \frac{1}{2}z_1^0 z_3^1 z_3^2 z_4^0 z_4^2 z_5^5 + z_1^0 z_3^1 z_3^2 z_4^1 z_4^2 z_5^4$$

$$+ z_1^0 z_3^1 z_3^2 z_4^1 z_4^4 z_5^2 - z_1^0 z_3^1 z_3^2 z_4^2 z_4^3 z_5^2 - \frac{1}{2}z_1^0 z_3^1 z_3^2 z_4^2 z_4^4 z_5^1 - \frac{1}{3}z_1^0 z_3^1 z_3^3 z_4^0 z_4^1 z_5^5 + z_1^0 z_3^1 z_3^3 z_4^0 z_4^3 z_5^3$$

$$- \frac{1}{3}z_1^0 z_3^1 z_3^3 z_4^0 z_4^4 z_5^2 - z_1^0 z_3^1 z_3^3 z_4^1 z_4^2 z_5^3 - \frac{2}{3}z_1^0 z_3^1 z_3^3 z_4^1 z_4^3 z_5^2 + z_1^0 z_3^1 z_3^3 z_4^2 z_4^3 z_5^1 + \frac{2}{3}z_1^0 z_3^2 z_3^3 z_4^0 z_4^1 z_5^4$$

$$- z_1^0 z_3^2 z_3^3 z_4^0 z_4^2 z_5^3 + \frac{1}{6}z_1^0 z_3^2 z_3^3 z_4^0 z_4^4 z_5^1 + 2z_1^0 z_3^2 z_3^3 z_4^1 z_4^2 z_5^2 - \frac{2}{3}z_1^0 z_3^2 z_3^3 z_4^1 z_4^3 z_5^1 + \frac{1}{6}z_1^1 z_3^0 z_3^1 z_4^0 z_4^4 z_5^4$$

$$- \frac{2}{3}z_1^1 z_3^0 z_3^1 z_4^1 z_4^3 z_5^4 - z_1^1 z_3^0 z_3^1 z_4^2 z_4^4 z_5^2 + 2z_1^1 z_3^0 z_3^1 z_4^2 z_4^3 z_5^3 + \frac{2}{3}z_1^1 z_3^0 z_3^1 z_4^3 z_4^4 z_5^1 - \frac{1}{3}z_1^1 z_3^0 z_3^2 z_4^0 z_4^4 z_5^3$$

$$+ z_1^1 z_3^0 z_3^2 z_4^1 z_4^2 z_5^4 - \frac{2}{3}z_1^1 z_3^0 z_3^2 z_4^1 z_4^3 z_5^3 + z_1^1 z_3^0 z_3^2 z_4^1 z_4^4 z_5^2 - z_1^1 z_3^0 z_3^2 z_4^2 z_4^3 z_5^2 - \frac{1}{3}z_1^1 z_3^0 z_3^2 z_4^3 z_4^4 z_5^0$$

$$- \frac{1}{6}z_1^1 z_3^0 z_3^3 z_4^0 z_4^2 z_5^4 + \frac{1}{3}z_1^1 z_3^0 z_3^3 z_4^0 z_4^3 z_5^3 - \frac{1}{3}z_1^1 z_3^0 z_3^3 z_4^1 z_4^2 z_5^3 - \frac{1}{3}z_1^1 z_3^0 z_3^3 z_4^1 z_4^4 z_5^1 + \frac{1}{3}z_1^1 z_3^0 z_3^3 z_4^2 z_4^3 z_5^1$$

$$+ \frac{1}{6}z_1^1 z_3^0 z_3^3 z_4^2 z_4^4 z_5^0 - \frac{1}{2}z_1^1 z_3^1 z_3^2 z_4^0 z_4^2 z_5^4 + z_1^1 z_3^1 z_3^2 z_4^0 z_4^3 z_5^3 - z_1^1 z_3^1 z_3^2 z_4^1 z_4^2 z_5^3 - z_1^1 z_3^1 z_3^2 z_4^1 z_4^4 z_5^1$$

$$+ z_1^1 z_3^1 z_3^2 z_4^2 z_4^3 z_5^1 + \frac{1}{2}z_1^1 z_3^1 z_3^2 z_4^2 z_4^4 z_5^0 - z_1^1 z_3^1 z_3^3 z_4^0 z_4^3 z_5^2 + \frac{1}{3}z_1^1 z_3^1 z_3^3 z_4^0 z_4^1 z_5^4 + \frac{1}{3}z_1^1 z_3^1 z_3^3 z_4^0 z_4^4 z_5^1$$

$$+ z_1^1 z_3^1 z_3^3 z_4^1 z_4^2 z_5^2 - z_1^1 z_3^1 z_3^3 z_4^2 z_4^3 z_5^0 + \frac{2}{3}z_1^1 z_3^1 z_3^3 z_4^1 z_4^3 z_5^1 - \frac{2}{3}z_1^1 z_3^2 z_3^3 z_4^0 z_4^1 z_5^3 + z_1^1 z_3^2 z_3^3 z_4^0 z_4^2 z_5^2$$

$$- \frac{1}{6}z_1^1 z_3^2 z_3^3 z_4^0 z_4^4 z_5^0 - 2z_1^1 z_3^2 z_3^3 z_4^1 z_4^2 z_5^1 + \frac{2}{3}z_1^1 z_3^2 z_3^3 z_4^1 z_4^3 z_5^0$$

7

$$
\begin{aligned}
\widehat{\mathbf{q}}_{15} = {} & -\frac{7}{6} z_1^0 z_3^0 z_3^1 z_4^0 z_4^4 z_5^5 - \frac{4}{3} z_1^0 z_3^0 z_3^1 z_4^1 z_4^3 z_5^5 + 6 z_1^0 z_3^0 z_3^1 z_4^1 z_4^4 z_5^4 + 4 z_1^0 z_3^0 z_3^1 z_4^2 z_4^3 z_5^4 - 11 z_1^0 z_3^0 z_3^1 z_4^2 z_4^4 z_5^3 \\
& + \frac{22}{3} z_1^0 z_3^0 z_3^1 z_4^3 z_4^4 z_5^2 + \frac{10}{3} z_1^0 z_3^0 z_3^2 z_4^0 z_4^3 z_5^5 - z_1^0 z_3^0 z_3^2 z_4^0 z_4^4 z_5^4 - \frac{32}{3} z_1^0 z_3^0 z_3^2 z_4^1 z_4^3 z_5^4 + \frac{4}{3} z_1^0 z_3^0 z_3^2 z_4^1 z_4^4 z_5^3 \\
& + 12 z_1^0 z_3^0 z_3^2 z_4^2 z_4^3 z_5^3 + 2 z_1^0 z_3^0 z_3^2 z_4^2 z_4^4 z_5^2 - \frac{14}{3} z_1^0 z_3^0 z_3^2 z_4^3 z_4^4 z_5^1 - \frac{3}{2} z_1^0 z_3^0 z_3^3 z_4^0 z_4^2 z_5^5 - \frac{1}{3} z_1^0 z_3^0 z_3^3 z_4^0 z_4^3 z_5^4 \\
& + \frac{2}{3} z_1^0 z_3^0 z_3^3 z_4^0 z_4^4 z_5^3 + 6 z_1^0 z_3^0 z_3^3 z_4^1 z_4^2 z_5^4 - \frac{4}{3} z_1^0 z_3^0 z_3^3 z_4^1 z_4^4 z_5^2 + \frac{3}{2} z_1^0 z_3^0 z_3^3 z_4^2 z_4^4 z_5^1 - 4 z_1^0 z_3^0 z_3^3 z_4^2 z_4^3 z_5^2 \\
& + \frac{1}{3} z_1^0 z_3^0 z_3^3 z_4^3 z_4^4 z_5^0 - z_1^0 z_3^1 z_3^2 z_4^0 z_4^3 z_5^4 + 2 z_1^0 z_3^1 z_3^2 z_4^0 z_4^4 z_5^3 - \frac{9}{2} z_1^0 z_3^1 z_3^2 z_4^0 z_4^2 z_5^5 + 18 z_1^0 z_3^1 z_3^2 z_4^1 z_4^2 z_5^4 \\
& - 4 z_1^0 z_3^1 z_3^2 z_4^1 z_4^4 z_5^2 - 12 z_1^0 z_3^1 z_3^2 z_4^2 z_4^3 z_5^2 + \frac{9}{2} z_1^0 z_3^1 z_3^2 z_4^2 z_4^4 z_5^1 + z_1^0 z_3^1 z_3^2 z_4^3 z_4^4 z_5^0 + \frac{8}{3} z_1^0 z_3^1 z_3^3 z_4^0 z_4^1 z_5^5 \\
& + z_1^0 z_3^1 z_3^3 z_4^0 z_4^2 z_5^4 - \frac{4}{3} z_1^0 z_3^1 z_3^3 z_4^0 z_4^4 z_5^2 - 20 z_1^0 z_3^1 z_3^3 z_4^1 z_4^2 z_5^3 + \frac{40}{3} z_1^0 z_3^1 z_3^3 z_4^1 z_4^3 z_5^2 - 4 z_1^0 z_3^1 z_3^3 z_4^2 z_4^3 z_5^1 \\
& - z_1^0 z_3^1 z_3^3 z_4^2 z_4^4 z_5^0 - \frac{16}{3} z_1^0 z_3^2 z_3^3 z_4^0 z_4^1 z_5^4 + 7 z_1^0 z_3^2 z_3^3 z_4^0 z_4^2 z_5^3 - \frac{14}{3} z_1^0 z_3^2 z_3^3 z_4^0 z_4^3 z_5^2 + \frac{11}{6} z_1^0 z_3^2 z_3^3 z_4^0 z_4^4 z_5^1 \\
& + 4 z_1^0 z_3^2 z_3^3 z_4^1 z_4^2 z_5^2 + 4 z_1^0 z_3^2 z_3^3 z_4^2 z_4^3 z_5^0 - 4 z_1^0 z_3^2 z_3^3 z_4^1 z_4^3 z_5^1 - \frac{2}{3} z_1^0 z_3^2 z_3^3 z_4^1 z_4^4 z_5^0 - \frac{2}{3} z_1^1 z_3^0 z_3^1 z_4^0 z_4^3 z_5^5 \\
& + \frac{11}{6} z_1^1 z_3^0 z_3^1 z_4^0 z_4^4 z_5^4 + 4 z_1^1 z_3^0 z_3^1 z_4^1 z_4^2 z_5^5 - 4 z_1^1 z_3^0 z_3^1 z_4^1 z_4^3 z_5^4 - \frac{14}{3} z_1^1 z_3^0 z_3^1 z_4^1 z_4^4 z_5^3 + 7 z_1^1 z_3^0 z_3^1 z_4^2 z_4^4 z_5^2 \\
& + 4 z_1^1 z_3^0 z_3^1 z_4^2 z_4^3 z_5^3 - \frac{16}{3} z_1^1 z_3^0 z_3^1 z_4^3 z_4^4 z_5^1 - z_1^1 z_3^0 z_3^2 z_4^0 z_4^2 z_5^5 - \frac{4}{3} z_1^1 z_3^0 z_3^2 z_4^0 z_4^4 z_5^3 - 4 z_1^1 z_3^0 z_3^2 z_4^1 z_4^2 z_5^4 \\
& + \frac{40}{3} z_1^1 z_3^0 z_3^2 z_4^1 z_4^3 z_5^3 - 20 z_1^1 z_3^0 z_3^2 z_4^2 z_4^3 z_5^2 + z_1^1 z_3^0 z_3^2 z_4^2 z_4^4 z_5^1 + \frac{8}{3} z_1^1 z_3^0 z_3^2 z_4^3 z_4^4 z_5^0 + \frac{1}{3} z_1^1 z_3^0 z_3^3 z_4^0 z_4^1 z_5^5 \\
& + \frac{3}{2} z_1^1 z_3^0 z_3^3 z_4^0 z_4^2 z_5^4 - \frac{4}{3} z_1^1 z_3^0 z_3^3 z_4^0 z_4^3 z_5^3 + \frac{2}{3} z_1^1 z_3^0 z_3^3 z_4^0 z_4^4 z_5^2 - 4 z_1^1 z_3^0 z_3^3 z_4^1 z_4^2 z_5^3 - \frac{1}{3} z_1^1 z_3^0 z_3^3 z_4^1 z_4^4 z_5^1 \\
& + 6 z_1^1 z_3^0 z_3^3 z_4^2 z_4^3 z_5^1 - \frac{3}{2} z_1^1 z_3^0 z_3^3 z_4^2 z_4^4 z_5^0 + z_1^1 z_3^1 z_3^2 z_4^0 z_4^1 z_5^5 + \frac{9}{2} z_1^1 z_3^1 z_3^2 z_4^0 z_4^2 z_5^4 - 4 z_1^1 z_3^1 z_3^2 z_4^0 z_4^3 z_5^3 \\
& + 2 z_1^1 z_3^1 z_3^2 z_4^0 z_4^4 z_5^2 - 12 z_1^1 z_3^1 z_3^2 z_4^1 z_4^2 z_5^3 - z_1^1 z_3^1 z_3^2 z_4^1 z_4^4 z_5^1 + 18 z_1^1 z_3^1 z_3^2 z_4^2 z_4^3 z_5^1 - \frac{9}{2} z_1^1 z_3^1 z_3^2 z_4^2 z_4^4 z_5^0 \\
& + \frac{4}{3} z_1^1 z_3^1 z_3^3 z_4^0 z_4^3 z_5^2 - \frac{14}{3} z_1^1 z_3^1 z_3^3 z_4^0 z_4^1 z_5^4 + 2 z_1^1 z_3^1 z_3^3 z_4^0 z_4^2 z_5^3 - z_1^1 z_3^1 z_3^3 z_4^0 z_4^4 z_5^1 + 12 z_1^1 z_3^1 z_3^3 z_4^1 z_4^2 z_5^2 \\
& - \frac{32}{3} z_1^1 z_3^1 z_3^3 z_4^1 z_4^3 z_5^1 + \frac{10}{3} z_1^1 z_3^1 z_3^3 z_4^1 z_4^4 z_5^0 + \frac{22}{3} z_1^1 z_3^2 z_3^3 z_4^0 z_4^1 z_5^3 - 11 z_1^1 z_3^2 z_3^3 z_4^0 z_4^2 z_5^2 + 6 z_1^1 z_3^2 z_3^3 z_4^0 z_4^3 z_5^1 \\
& - \frac{7}{6} z_1^1 z_3^2 z_3^3 z_4^0 z_4^4 z_5^0 + 4 z_1^1 z_3^2 z_3^3 z_4^1 z_4^2 z_5^1 - \frac{4}{3} z_1^1 z_3^2 z_3^3 z_4^1 z_4^3 z_5^0
\end{aligned}
$$

$$\widehat{\mathbf{q}}_{16} = \frac{1}{4}z_1^0 z_3^0 z_3^1 z_4^0 z_4^4 z_5^5 + \frac{1}{2}z_1^0 z_3^0 z_3^1 z_4^1 z_4^3 z_5^5 - \frac{3}{2}z_1^0 z_3^0 z_3^1 z_4^1 z_4^4 z_5^4 - \frac{3}{2}z_1^0 z_3^0 z_3^1 z_4^2 z_4^3 z_5^4 + 3z_1^0 z_3^0 z_3^1 z_4^2 z_4^4 z_5^3$$

$$- 2z_1^0 z_3^0 z_3^1 z_4^3 z_4^4 z_5^2 - z_1^0 z_3^0 z_3^2 z_4^0 z_4^3 z_5^5 + \frac{1}{2}z_1^0 z_3^0 z_3^2 z_4^0 z_4^4 z_5^4 + 3z_1^0 z_3^0 z_3^2 z_4^1 z_4^3 z_5^4 - z_1^0 z_3^0 z_3^2 z_4^1 z_4^4 z_5^3$$

$$- 3z_1^0 z_3^0 z_3^2 z_4^2 z_4^3 z_5^3 + z_1^0 z_3^0 z_3^2 z_4^3 z_4^4 z_5^1 + \frac{9}{16}z_1^0 z_3^0 z_3^3 z_4^0 z_4^2 z_5^5 - \frac{1}{8}z_1^0 z_3^0 z_3^3 z_4^0 z_4^3 z_5^4 - \frac{3}{16}z_1^0 z_3^0 z_3^3 z_4^0 z_4^4 z_5^3$$

$$- \frac{9}{4}z_1^0 z_3^0 z_3^3 z_4^1 z_4^2 z_5^4 + z_1^0 z_3^0 z_3^3 z_4^1 z_4^3 z_5^3 + \frac{1}{4}z_1^0 z_3^0 z_3^3 z_4^1 z_4^4 z_5^2 - \frac{3}{16}z_1^0 z_3^0 z_3^3 z_4^2 z_4^4 z_5^1 - \frac{1}{8}z_1^0 z_3^0 z_3^3 z_4^3 z_4^4 z_5^0$$

$$+ \frac{3}{8}z_1^0 z_3^1 z_3^2 z_4^0 z_4^3 z_5^4 - \frac{15}{16}z_1^0 z_3^1 z_3^2 z_4^0 z_4^4 z_5^3 + \frac{21}{16}z_1^0 z_3^1 z_3^2 z_4^0 z_4^2 z_5^5 - \frac{21}{4}z_1^0 z_3^1 z_3^2 z_4^1 z_4^2 z_5^4 + \frac{9}{4}z_1^0 z_3^1 z_3^2 z_4^1 z_4^4 z_5^2$$

$$+ 3z_1^0 z_3^1 z_3^2 z_3^2 z_4^2 z_4^3 z_5^2 - \frac{39}{16}z_1^0 z_3^1 z_3^2 z_4^2 z_4^4 z_5^1 + \frac{3}{8}z_1^0 z_3^1 z_3^2 z_4^3 z_4^4 z_5^0 - z_1^0 z_3^1 z_3^3 z_4^0 z_4^1 z_5^5 + \frac{1}{2}z_1^0 z_3^1 z_3^3 z_4^0 z_4^4 z_5^2$$

$$+ 6z_1^0 z_3^1 z_3^3 z_4^1 z_4^2 z_5^3 - 5z_1^0 z_3^1 z_3^3 z_4^1 z_4^3 z_5^2 + 3z_1^0 z_3^1 z_3^3 z_4^2 z_4^3 z_5^1 + 2z_1^0 z_3^2 z_3^3 z_4^0 z_4^1 z_5^4 - 3z_1^0 z_3^2 z_3^3 z_4^0 z_4^2 z_5^3$$

$$+ 2z_1^0 z_3^2 z_3^3 z_4^0 z_4^3 z_5^2 - \frac{3}{4}z_1^0 z_3^2 z_3^3 z_4^0 z_4^4 z_5^1 - \frac{3}{2}z_1^0 z_3^2 z_3^3 z_4^2 z_4^3 z_5^0 + \frac{1}{2}z_1^0 z_3^2 z_3^3 z_4^1 z_4^3 z_5^1 + \frac{1}{2}z_1^0 z_3^2 z_3^3 z_4^1 z_4^4 z_5^0$$

$$+ \frac{1}{2}z_1^1 z_3^0 z_3^1 z_4^0 z_4^3 z_5^5 - \frac{3}{4}z_1^1 z_3^0 z_3^1 z_4^0 z_4^4 z_5^4 - \frac{3}{2}z_1^1 z_3^0 z_3^1 z_4^1 z_4^2 z_5^5 + \frac{1}{2}z_1^1 z_3^0 z_3^1 z_4^1 z_4^3 z_5^4 + 2z_1^1 z_3^0 z_3^1 z_4^1 z_4^4 z_5^3$$

$$- 3z_1^1 z_3^0 z_3^1 z_4^2 z_4^4 z_5^2 + 2z_1^1 z_3^0 z_3^1 z_4^3 z_4^4 z_5^1 + \frac{1}{2}z_1^1 z_3^0 z_3^2 z_4^0 z_4^4 z_5^3 + 3z_1^1 z_3^0 z_3^2 z_4^1 z_4^2 z_5^4 - 5z_1^1 z_3^0 z_3^2 z_4^1 z_4^3 z_5^3$$

$$+ 6z_1^1 z_3^0 z_3^2 z_4^2 z_4^3 z_5^2 - z_1^1 z_3^0 z_3^2 z_4^3 z_4^4 z_5^0 - \frac{1}{8}z_1^1 z_3^0 z_3^3 z_4^0 z_4^1 z_5^5 - \frac{3}{16}z_1^1 z_3^0 z_3^3 z_4^0 z_4^2 z_5^4 + \frac{1}{4}z_1^1 z_3^0 z_3^3 z_4^0 z_4^3 z_5^3$$

$$- \frac{3}{16}z_1^1 z_3^0 z_3^3 z_4^0 z_4^4 z_5^2 + z_1^1 z_3^0 z_3^3 z_4^1 z_4^3 z_5^2 - \frac{1}{8}z_1^1 z_3^0 z_3^3 z_4^1 z_4^4 z_5^1 - \frac{9}{4}z_1^1 z_3^0 z_3^3 z_4^2 z_4^3 z_5^1 + \frac{9}{16}z_1^1 z_3^0 z_3^3 z_4^2 z_4^4 z_5^0$$

$$+ \frac{3}{8}z_1^1 z_3^1 z_3^2 z_4^0 z_4^1 z_5^5 - \frac{39}{16}z_1^1 z_3^1 z_3^2 z_4^0 z_4^2 z_5^4 + \frac{9}{4}z_1^1 z_3^1 z_3^2 z_4^0 z_4^3 z_5^3 - \frac{15}{16}z_1^1 z_3^1 z_3^2 z_4^0 z_4^4 z_5^2 + 3z_1^1 z_3^1 z_3^2 z_4^1 z_4^2 z_5^3$$

$$+ \frac{3}{8}z_1^1 z_3^1 z_3^2 z_4^1 z_4^4 z_5^1 - \frac{21}{4}z_1^1 z_3^1 z_3^2 z_4^2 z_4^3 z_5^1 + \frac{21}{16}z_1^1 z_3^1 z_3^2 z_4^2 z_4^4 z_5^0 - z_1^1 z_3^1 z_3^3 z_4^0 z_4^3 z_5^2 + z_1^1 z_3^1 z_3^3 z_4^0 z_4^4 z_5^1$$

$$+ \frac{1}{2}z_1^1 z_3^1 z_3^3 z_4^0 z_4^4 z_5^1 - 3z_1^1 z_3^1 z_3^3 z_4^1 z_4^2 z_5^2 + 3z_1^1 z_3^1 z_3^3 z_4^1 z_4^3 z_5^1 - z_1^1 z_3^1 z_3^3 z_4^1 z_4^4 z_5^0 - 2z_1^1 z_3^2 z_3^3 z_4^0 z_4^1 z_5^3$$

$$+ 3z_1^1 z_3^2 z_3^3 z_4^0 z_4^2 z_5^2 - \frac{3}{2}z_1^1 z_3^2 z_3^3 z_4^0 z_4^3 z_5^1 + \frac{1}{4}z_1^1 z_3^2 z_3^3 z_4^0 z_4^4 z_5^0 - \frac{3}{2}z_1^1 z_3^2 z_3^3 z_4^1 z_4^2 z_5^1 + \frac{1}{2}z_1^1 z_3^2 z_3^3 z_4^1 z_4^3 z_5^0$$

$$\widehat{\mathbf{q}}_{17} = \frac{1}{12}z_1^0 z_3^0 z_3^1 z_4^0 z_4^4 z_5^5 + \frac{1}{6}z_1^0 z_3^0 z_3^1 z_4^1 z_4^3 z_5^5 - \frac{1}{2}z_1^0 z_3^0 z_3^1 z_4^1 z_4^4 z_5^4 - \frac{1}{2}z_1^0 z_3^0 z_3^1 z_4^2 z_4^3 z_5^4 + z_1^0 z_3^0 z_3^1 z_4^2 z_4^4 z_5^3$$

$$- \frac{2}{3}z_1^0 z_3^0 z_3^1 z_4^3 z_4^4 z_5^2 - \frac{1}{3}z_1^0 z_3^0 z_3^2 z_4^0 z_4^3 z_5^5 + \frac{1}{6}z_1^0 z_3^0 z_3^2 z_4^0 z_4^4 z_5^4 + z_1^0 z_3^0 z_3^2 z_4^1 z_4^3 z_5^4 - \frac{1}{3}z_1^0 z_3^0 z_3^2 z_4^1 z_4^4 z_5^3$$

$$- z_1^0 z_3^0 z_3^2 z_4^2 z_4^3 z_5^3 + \frac{1}{3}z_1^0 z_3^0 z_3^2 z_4^3 z_4^4 z_5^1 + \frac{7}{48}z_1^0 z_3^0 z_3^3 z_4^0 z_4^2 z_5^5 + \frac{1}{24}z_1^0 z_3^0 z_3^3 z_4^0 z_4^3 z_5^4 - \frac{5}{48}z_1^0 z_3^0 z_3^3 z_4^0 z_4^4 z_5^3$$

$$- \frac{7}{12}z_1^0 z_3^0 z_3^3 z_4^1 z_4^2 z_5^4 + \frac{1}{4}z_1^0 z_3^0 z_3^3 z_4^1 z_4^4 z_5^2 - \frac{13}{48}z_1^0 z_3^0 z_3^3 z_4^2 z_4^4 z_5^1 + \frac{1}{3}z_1^0 z_3^0 z_3^3 z_4^2 z_4^3 z_5^2 + \frac{1}{24}z_1^0 z_3^0 z_3^3 z_4^3 z_4^4 z_5^0$$

$$- \frac{1}{8}z_1^0 z_3^1 z_3^2 z_4^0 z_4^3 z_5^4 - \frac{3}{16}z_1^0 z_3^1 z_3^2 z_4^0 z_4^4 z_5^3 + \frac{9}{16}z_1^0 z_3^1 z_3^2 z_4^0 z_4^2 z_5^5 - \frac{9}{4}z_1^0 z_3^1 z_3^2 z_4^1 z_4^2 z_5^4 + z_1^0 z_3^1 z_3^2 z_4^1 z_4^3 z_5^3$$

$$+ \frac{1}{4}z_1^0 z_3^1 z_3^2 z_4^1 z_4^4 z_5^2 - \frac{3}{16}z_1^0 z_3^1 z_3^2 z_4^2 z_4^4 z_5^1 - \frac{1}{8}z_1^0 z_3^1 z_3^2 z_4^3 z_4^4 z_5^0 - \frac{1}{3}z_1^0 z_3^1 z_3^3 z_4^0 z_4^1 z_5^5 + \frac{1}{6}z_1^0 z_3^1 z_3^3 z_4^0 z_4^4 z_5^2$$

$$+ 2z_1^0 z_3^1 z_3^3 z_4^1 z_4^2 z_5^3 - \frac{5}{3}z_1^0 z_3^1 z_3^3 z_4^1 z_4^3 z_5^2 + z_1^0 z_3^1 z_3^3 z_4^2 z_4^3 z_5^1 + \frac{2}{3}z_1^0 z_3^2 z_3^3 z_4^0 z_4^1 z_5^4 - z_1^0 z_3^2 z_3^3 z_4^0 z_4^2 z_5^3$$

$$+ \frac{2}{3}z_1^0 z_3^2 z_3^3 z_4^0 z_4^3 z_5^2 - \frac{1}{4}z_1^0 z_3^2 z_3^3 z_4^0 z_4^4 z_5^1 - \frac{1}{2}z_1^0 z_3^2 z_3^3 z_4^2 z_4^3 z_5^0 + \frac{1}{6}z_1^0 z_3^2 z_3^3 z_4^1 z_4^3 z_5^1 + \frac{1}{6}z_1^0 z_3^2 z_3^3 z_4^1 z_4^4 z_5^0$$

$$+ \frac{1}{6}z_1^1 z_3^0 z_3^1 z_4^0 z_4^3 z_5^5 - \frac{1}{4}z_1^1 z_3^0 z_3^1 z_4^0 z_4^4 z_5^4 - \frac{1}{2}z_1^1 z_3^0 z_3^1 z_4^1 z_4^2 z_5^5 + \frac{1}{6}z_1^1 z_3^0 z_3^1 z_4^1 z_4^4 z_5^4 + \frac{2}{3}z_1^1 z_3^0 z_3^1 z_4^1 z_4^4 z_5^3$$

$$- z_1^1 z_3^0 z_3^1 z_4^2 z_4^4 z_5^2 + \frac{2}{3}z_1^1 z_3^0 z_3^1 z_4^3 z_4^4 z_5^1 + \frac{1}{6}z_1^1 z_3^0 z_3^2 z_4^0 z_4^4 z_5^3 + z_1^1 z_3^0 z_3^2 z_4^1 z_4^2 z_5^4 - \frac{5}{3}z_1^1 z_3^0 z_3^2 z_4^1 z_4^3 z_5^3$$

$$+ 2z_1^1 z_3^0 z_3^2 z_4^2 z_4^3 z_5^2 - \frac{1}{3}z_1^1 z_3^0 z_3^2 z_4^3 z_4^4 z_5^0 + \frac{1}{24}z_1^1 z_3^0 z_3^3 z_4^0 z_4^1 z_5^5 - \frac{13}{48}z_1^1 z_3^0 z_3^3 z_4^0 z_4^2 z_5^4 + \frac{1}{4}z_1^1 z_3^0 z_3^3 z_4^0 z_4^3 z_5^3$$

$$- \frac{5}{48}z_1^1 z_3^0 z_3^3 z_4^0 z_4^4 z_5^2 + \frac{1}{3}z_1^1 z_3^0 z_3^3 z_4^1 z_4^2 z_5^3 + \frac{1}{24}z_1^1 z_3^0 z_3^3 z_4^1 z_4^4 z_5^1 - \frac{7}{12}z_1^1 z_3^0 z_3^3 z_4^2 z_4^3 z_5^1 + \frac{7}{48}z_1^1 z_3^0 z_3^3 z_4^2 z_4^4 z_5^0$$

$$- \frac{1}{8}z_1^1 z_3^1 z_3^2 z_4^0 z_4^1 z_5^5 - \frac{3}{16}z_1^1 z_3^1 z_3^2 z_4^0 z_4^2 z_5^4 + \frac{1}{4}z_1^1 z_3^1 z_3^2 z_4^0 z_4^3 z_5^3 - \frac{3}{16}z_1^1 z_3^1 z_3^2 z_4^0 z_4^4 z_5^2 + z_1^1 z_3^1 z_3^2 z_4^1 z_4^4 z_5^2$$

$$- \frac{1}{8}z_1^1 z_3^1 z_3^2 z_4^1 z_4^4 z_5^1 - \frac{9}{4}z_1^1 z_3^1 z_3^2 z_4^2 z_4^3 z_5^1 + \frac{9}{16}z_1^1 z_3^1 z_3^2 z_4^2 z_4^4 z_5^0 - \frac{1}{3}z_1^1 z_3^1 z_3^3 z_4^0 z_4^3 z_5^2 + \frac{1}{3}z_1^1 z_3^1 z_3^3 z_4^0 z_4^1 z_5^4$$

$$+ \frac{1}{6}z_1^1 z_3^1 z_3^3 z_4^0 z_4^4 z_5^1 - z_1^1 z_3^1 z_3^3 z_4^1 z_4^2 z_5^2 + z_1^1 z_3^1 z_3^3 z_4^1 z_4^3 z_5^1 - \frac{1}{3}z_1^1 z_3^1 z_3^3 z_4^1 z_4^4 z_5^0 - \frac{2}{3}z_1^1 z_3^2 z_3^3 z_4^0 z_4^1 z_5^3$$

$$+ z_1^1 z_3^2 z_3^3 z_4^0 z_4^2 z_5^2 - \frac{1}{2}z_1^1 z_3^2 z_3^3 z_4^0 z_4^3 z_5^1 + \frac{1}{12}z_1^1 z_3^2 z_3^3 z_4^0 z_4^4 z_5^0 - \frac{1}{2}z_1^1 z_3^2 z_3^3 z_4^1 z_4^2 z_5^1 + \frac{1}{6}z_1^1 z_3^2 z_3^3 z_4^1 z_4^3 z_5^0$$