Anharmonic Group Elements as Generated by Machine

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$$
\begin{aligned}
\tfrac{\lambda}{4}(A+B)^4 \ = \ & \lambda\cdot(0.25)\cdot(B^4 + A^4) \\
& +\lambda\cdot(B^3A + BA^3) \\
& +\lambda\cdot(1.5)\cdot(B^2 + A^2) \\
& +\lambda\cdot(1.5)\cdot B^2A^2 \\
& +\lambda\cdot(3)\cdot BA \\
& +\lambda\cdot(0.75)
\end{aligned}
$$

$$
\begin{aligned}
[-X, H_0] \quad = \quad & \lambda^3 \cdot (8 \cdot \gamma_{42}) \cdot (B^8 + A^8) + \lambda^3 \cdot (8 \cdot \gamma_{32}) \cdot (B^8 - A^8) \\
& + \lambda^3 \cdot (6 \cdot \gamma_{43}) \cdot (B^7 A + B A^7) + \lambda^3 \cdot (6 \cdot \gamma_{33}) \cdot (B^7 A - B A^7) \\
& + \lambda^3 \cdot (4 \cdot \gamma_{44}) \cdot (B^6 A^2 + B^2 A^6) + \lambda^3 \cdot (4 \cdot \gamma_{34}) \cdot (B^6 A^2 - B^2 A^6) \\
& + \lambda^3 \cdot (2 \cdot \gamma_{45}) \cdot (B^5 A^3 + B^3 A^5) + \lambda^3 \cdot (2 \cdot \gamma_{35}) \cdot (B^5 A^3 - B^3 A^5) \\
& + \lambda^2 \cdot (6 \cdot \gamma_{21}) \cdot (B^6 + A^6) \\
& + \lambda^3 \cdot (6 \cdot \gamma_{46}) \cdot (B^6 + A^6) + \lambda^3 \cdot (6 \cdot \gamma_{36}) \cdot (B^6 - A^6) \\
& + \lambda^3 \cdot (4 \cdot \gamma_{47}) \cdot (B^5 A + B A^5) + \lambda^3 \cdot (4 \cdot \gamma_{37}) \cdot (B^5 A - B A^5) \\
& + \lambda^2 \cdot (2 \cdot \gamma_{23}) \cdot (B^4 A^2 + B^2 A^4) \\
& + \lambda^3 \cdot (2 \cdot \gamma_{48}) \cdot (B^4 A^2 + B^2 A^4) + \lambda^3 \cdot (2 \cdot \gamma_{38}) \cdot (B^4 A^2 - B^2 A^4) \\
& + \lambda \cdot (4 \cdot \gamma_8) \cdot (B^4 + A^4) \\
& + \lambda^3 \cdot (4 \cdot \gamma_{49}) \cdot (B^4 + A^4) + \lambda^3 \cdot (4 \cdot \gamma_{39}) \cdot (B^4 - A^4) \\
& + \lambda \cdot (2 \cdot \gamma_9) \cdot (B^3 A + B A^3) \\
& + \lambda^2 \cdot (2 \cdot \gamma_{25}) \cdot (B^3 A + B A^3) \\
& + \lambda^3 \cdot (2 \cdot \gamma_{50}) \cdot (B^3 A + B A^3) + \lambda^3 \cdot (2 \cdot \gamma_{40}) \cdot (B^3 A - B A^3) \\
& + \lambda \cdot (2 \cdot \gamma_{10}) \cdot (B^2 + A^2) \\
& + \lambda^2 \cdot (2 \cdot \gamma_{26}) \cdot (B^2 + A^2) \\
& + \lambda^3 \cdot (2 \cdot \gamma_{51}) \cdot (B^2 + A^2) + \lambda^3 \cdot (2 \cdot \gamma_{41}) \cdot (B^2 - A^2)
\end{aligned}
$$

$$\frac{1}{2!}[-X, [-X, H_0]] \quad = \quad \begin{aligned}[t]
&\lambda^3 \cdot (-12 \cdot \gamma_9 \cdot \gamma_{21}) \cdot (B^8 + A^8) \\
&+\lambda^3 \cdot (-8 \cdot \gamma_8 \cdot \gamma_{23}) \cdot (B^7 A + B A^7) \\
&+\lambda^3 \cdot (72 \cdot \gamma_9 \cdot \gamma_{21}) \cdot (B^6 A^2 + B^2 A^6) \\
&+\lambda^3 \cdot (48 \cdot \gamma_8 \cdot \gamma_{23} + 120 \cdot \gamma_8 \cdot \gamma_{21}) \cdot (B^5 A^3 + B^3 A^5) \\
&+\lambda^3 \cdot (-12 \cdot \gamma_8 \cdot \gamma_{23} - 4 \cdot \gamma_8 \cdot \gamma_{25}) \cdot (B^6 + A^6) \\
&+\lambda^2 \cdot (-4 \cdot \gamma_8 \cdot \gamma_9) \cdot (B^6 + A^6) \\
&+\lambda^3 \cdot (360 \cdot \gamma_9 \cdot \gamma_{21} + 48 \cdot \gamma_{10} \cdot \gamma_{21}) \cdot (B^5 A + B A^5) \\
&+\lambda^3 \cdot (216 \cdot \gamma_8 \cdot \gamma_{23} + 900 \cdot \gamma_8 \cdot \gamma_{21} + 36 \cdot \gamma_8 \cdot \gamma_{25}) \cdot (B^4 A^2 + B^2 A^4) \\
&+\lambda^2 \cdot (36 \cdot \gamma_8 \cdot \gamma_9) \cdot (B^4 A^2 + B^2 A^4) \\
&+\lambda^3 \cdot (480 \cdot \gamma_9 \cdot \gamma_{21} + 120 \cdot \gamma_{10} \cdot \gamma_{21}) \cdot (B^4 + A^4) \\
&+\lambda^3 \cdot (288 \cdot \gamma_8 \cdot \gamma_{23} + 2400 \cdot \gamma_8 \cdot \gamma_{21} + 108 \cdot \gamma_8 \cdot \gamma_{25} + 24 \cdot \gamma_8 \cdot \gamma_{26}) \cdot (B^3 A + B A^3) \\
&+\lambda^2 \cdot (108 \cdot \gamma_8 \cdot \gamma_9 + 24 \cdot \gamma_8 \cdot \gamma_{10}) \cdot (B^3 A + B A^3) \\
&+\lambda^3 \cdot (72 \cdot \gamma_8 \cdot \gamma_{23} + 1800 \cdot \gamma_8 \cdot \gamma_{21} + 72 \cdot \gamma_8 \cdot \gamma_{25} + 36 \cdot \gamma_8 \cdot \gamma_{26}) \cdot (B^2 + A^2) \\
&+\lambda^2 \cdot (72 \cdot \gamma_8 \cdot \gamma_9 + 36 \cdot \gamma_8 \cdot \gamma_{10}) \cdot (B^2 + A^2) \\
&+\lambda^3 \cdot (40 \cdot \gamma_9 \cdot \gamma_{23}) \cdot B^4 A^4 \\
&+\lambda^3 \cdot (144 \cdot \gamma_9 \cdot \gamma_{23} + 32 \cdot \gamma_{10} \cdot \gamma_{23} + 32 \cdot \gamma_9 \cdot \gamma_{25}) \cdot B^3 A^3 \\
&+\lambda^2 \cdot (64 \cdot \gamma_8^2 + 16 \cdot \gamma_9^2) \cdot B^3 A^3 \\
&+\lambda^3 \cdot (96 \cdot \gamma_9 \cdot \gamma_{23} + 48 \cdot \gamma_{10} \cdot \gamma_{23} + 72 \cdot \gamma_9 \cdot \gamma_{25} + 24 \cdot \gamma_9 \cdot \gamma_{26} + 24 \cdot \gamma_{10} \cdot \gamma_{25}) \cdot B^2 A^2 \\
&+\lambda^2 \cdot (288 \cdot \gamma_8^2 + 36 \cdot \gamma_9^2 + 24 \cdot \gamma_9 \cdot \gamma_{10}) \cdot B^2 A^2 \\
&+\lambda^2 \cdot (384 \cdot \gamma_8^2 + 12 \cdot \gamma_9^2 + 24 \cdot \gamma_9 \cdot \gamma_{10} + 8 \cdot \gamma_{10}^2) \cdot B A \\
&+\lambda^3 \cdot (24 \cdot \gamma_9 \cdot \gamma_{25} + 24 \cdot \gamma_9 \cdot \gamma_{26} + 24 \cdot \gamma_{10} \cdot \gamma_{25} + 16 \cdot \gamma_{10} \cdot \gamma_{26}) \cdot B A \\
&+\lambda^2 \cdot (96 \cdot \gamma_8^2 + 4 \cdot \gamma_{10}^2) \\
&+\lambda^3 \cdot (8 \cdot \gamma_{10} \cdot \gamma_{26})
\end{aligned}$$

$$
\begin{aligned}
[-X,[-X,[-X,H_0]]] \quad = \quad & \lambda^3 {\cdot} (48{\cdot}\gamma_8{\cdot}\gamma_9^2){\cdot}(B^8 + A^8) \\
& + \lambda^3 {\cdot} (576{\cdot}\gamma_8^2{\cdot}\gamma_9){\cdot}(B^7 A + B A^7) \\
& + \lambda^3 {\cdot} (1536{\cdot}\gamma_8^3 + 384{\cdot}\gamma_8{\cdot}\gamma_9^2){\cdot}(B^6 A^2 + B^2 A^6) \\
& + \lambda^3 {\cdot} (1728{\cdot}\gamma_8^2{\cdot}\gamma_9 + 192{\cdot}\gamma_9^3){\cdot}(B^5 A^3 + B^3 A^5) \\
& + \lambda^3 {\cdot} (1728{\cdot}\gamma_8^2{\cdot}\gamma_9 + 192{\cdot}\gamma_8^2{\cdot}\gamma_{10}){\cdot}(B^6 + A^6) \\
& + \lambda^3 {\cdot} (9216{\cdot}\gamma_8^3 + 1440{\cdot}\gamma_8{\cdot}\gamma_9^2 + 576{\cdot}\gamma_8{\cdot}\gamma_9{\cdot}\gamma_{10}){\cdot}(B^5 A + B A^5) \\
& + \lambda^3 {\cdot} (10944{\cdot}\gamma_8^2{\cdot}\gamma_9 + 864{\cdot}\gamma_9^3 + 1344{\cdot}\gamma_8^2{\cdot}\gamma_{10} + 384{\cdot}\gamma_9^2{\cdot}\gamma_{10}){\cdot}(B^4 A^2 + B^2 A^4) \\
& + \lambda^3 {\cdot} (13056{\cdot}\gamma_8^3 + 480{\cdot}\gamma_8{\cdot}\gamma_9^2 + 960{\cdot}\gamma_8{\cdot}\gamma_9{\cdot}\gamma_{10} + 160{\cdot}\gamma_8{\cdot}\gamma_{10}^2){\cdot}(B^4 + A^4) \\
& + \lambda^3 {\cdot} (17760{\cdot}\gamma_8^2{\cdot}\gamma_9 + 672{\cdot}\gamma_9^3 + 5376{\cdot}\gamma_8^2{\cdot}\gamma_{10} + 864{\cdot}\gamma_9^2{\cdot}\gamma_{10} + 224{\cdot}\gamma_9{\cdot}\gamma_{10}^2){\cdot}(B^3 A + \\
& + \lambda^3 {\cdot} (4704{\cdot}\gamma_8^2{\cdot}\gamma_{10} + 192{\cdot}\gamma_9^2{\cdot}\gamma_{10} + 192{\cdot}\gamma_9{\cdot}\gamma_{10}^2 + 32{\cdot}\gamma_{10}^3 + 5760{\cdot}\gamma_8^2{\cdot}\gamma_9){\cdot}(B^2 + A^2) \\
& + \lambda^3 {\cdot} (1440{\cdot}\gamma_8{\cdot}\gamma_9^2){\cdot}B^4 A^4 \\
& + \lambda^3 {\cdot} (8640{\cdot}\gamma_8{\cdot}\gamma_9^2 + 1920{\cdot}\gamma_8{\cdot}\gamma_9{\cdot}\gamma_{10}){\cdot}B^3 A^3 \\
& + \lambda^3 {\cdot} (12960{\cdot}\gamma_8{\cdot}\gamma_9^2 + 6912{\cdot}\gamma_8{\cdot}\gamma_9{\cdot}\gamma_{10} + 576{\cdot}\gamma_8{\cdot}\gamma_{10}^2){\cdot}B^2 A^2 \\
& + \lambda^3 {\cdot} (4320{\cdot}\gamma_8{\cdot}\gamma_9^2 + 5184{\cdot}\gamma_8{\cdot}\gamma_9{\cdot}\gamma_{10} + 1152{\cdot}\gamma_8{\cdot}\gamma_{10}^2){\cdot}B A \\
& + \lambda^3 {\cdot} (576{\cdot}\gamma_8{\cdot}\gamma_9{\cdot}\gamma_{10} + 288{\cdot}\gamma_8{\cdot}\gamma_{10}^2)
\end{aligned}
$$

$$6 \cdot \left([-X, H_0] + \tfrac{1}{2!}[-X, [-X, H_0]] + \tfrac{1}{3!}[-X, [-X, [-X, H_0]]]\right)$$

$$
\begin{aligned}
= \quad & \lambda^3 \cdot (48 \cdot \gamma_{42} - 72 \cdot \gamma_9 \cdot \gamma_{21} + 48 \cdot \gamma_8 \cdot \gamma_9^2) \cdot (B^8 + A^8) + \lambda^3 \cdot (48 \cdot \gamma_{32}) \cdot (B^8 - A^8) \\
& + \lambda^3 \cdot (36 \cdot \gamma_{43} - 48 \cdot \gamma_8 \cdot \gamma_{23} + 576 \cdot \gamma_8^2 \cdot \gamma_9) \cdot (B^7 A + B A^7) + \lambda^3 \cdot (36 \cdot \gamma_{33}) \cdot (B^7 A - B A^7) \\
& + \lambda^3 \cdot (24 \cdot \gamma_{44} + 432 \cdot \gamma_9 \cdot \gamma_{21} + 1536 \cdot \gamma_8^3 + 384 \cdot \gamma_8 \cdot \gamma_9^2) \cdot (B^6 A^2 + B^2 A^6) + \lambda^3 \cdot (24 \cdot \gamma_{34}) \cdot (B^6 A^2 - B^2 A^6) \\
& + \lambda^3 \cdot (12 \cdot \gamma_{45} + 288 \cdot \gamma_8 \cdot \gamma_{23} + 720 \cdot \gamma_8 \cdot \gamma_{21} + 1728 \cdot \gamma_8^2 \cdot \gamma_9 + 192 \cdot \gamma_9^3) \cdot (B^5 A^3 + B^3 A^5) + \lambda^3 \cdot (12 \cdot \gamma_{35}) \cdot (B^5 A^3 \\
& + \lambda^2 \cdot (36 \cdot \gamma_{21} - 24 \cdot \gamma_8 \cdot \gamma_9) \cdot (B^6 + A^6) \\
& + \lambda^3 \cdot (36 \cdot \gamma_{46} - 72 \cdot \gamma_8 \cdot \gamma_{23} - 24 \cdot \gamma_8 \cdot \gamma_{25} + 1728 \cdot \gamma_8^2 \cdot \gamma_9 + 192 \cdot \gamma_8^2 \cdot \gamma_{10}) \cdot (B^6 + A^6) + \lambda^3 \cdot (36 \cdot \gamma_{36}) \cdot (B^6 - A^6) \\
& + \lambda^3 \cdot (24 \cdot \gamma_{47} + 2160 \cdot \gamma_9 \cdot \gamma_{21} + 288 \cdot \gamma_{10} \cdot \gamma_{21} + 9216 \cdot \gamma_8^3 + 1440 \cdot \gamma_8 \cdot \gamma_9^2 + 576 \cdot \gamma_8 \cdot \gamma_9 \cdot \gamma_{10}) \cdot (B^5 A + B A^5) + \lambda \\
& + \lambda^2 \cdot (12 \cdot \gamma_{23} + 216 \cdot \gamma_8 \cdot \gamma_9) \cdot (B^4 A^2 + B^2 A^4) \\
& + \lambda^3 \cdot (12 \cdot \gamma_{48} + 1296 \cdot \gamma_8 \cdot \gamma_{23} + 5400 \cdot \gamma_8 \cdot \gamma_{21} + 216 \cdot \gamma_8 \cdot \gamma_{25} + 10944 \cdot \gamma_8^2 \cdot \gamma_9 + 864 \cdot \gamma_9^3 + 1344 \cdot \gamma_8^2 \cdot \gamma_{10} + 384 \\
& + \lambda \cdot (24 \cdot \gamma_8) \cdot (B^4 + A^4) \\
& + \lambda^3 \cdot (24 \cdot \gamma_{49} + 2880 \cdot \gamma_9 \cdot \gamma_{21} + 720 \cdot \gamma_{10} \cdot \gamma_{21} + 13056 \cdot \gamma_8^3 + 480 \cdot \gamma_8 \cdot \gamma_9^2 + 960 \cdot \gamma_8 \cdot \gamma_9 \cdot \gamma_{10} + 160 \cdot \gamma_8 \cdot \gamma_{10}^2) \cdot (B^4 \\
& + \lambda \cdot (12 \cdot \gamma_9) \cdot (B^3 A + B A^3) \\
& + \lambda^2 \cdot (12 \cdot \gamma_{25} + 648 \cdot \gamma_8 \cdot \gamma_9 + 144 \cdot \gamma_8 \cdot \gamma_{10}) \cdot (B^3 A + B A^3) \\
& + \lambda^3 \cdot (12 \cdot \gamma_{50} + 1728 \cdot \gamma_8 \cdot \gamma_{23} + 14400 \cdot \gamma_8 \cdot \gamma_{21} + 648 \cdot \gamma_8 \cdot \gamma_{25} + 144 \cdot \gamma_8 \cdot \gamma_{26} + 17760 \cdot \gamma_8^2 \cdot \gamma_9 + 672 \cdot \gamma_9^3 + 5376 \\
& + \lambda \cdot (12 \cdot \gamma_{10}) \cdot (B^2 + A^2) \\
& + \lambda^2 \cdot (12 \cdot \gamma_{26} + 432 \cdot \gamma_8 \cdot \gamma_9 + 216 \cdot \gamma_8 \cdot \gamma_{10}) \cdot (B^2 + A^2) \\
& + \lambda^3 \cdot (12 \cdot \gamma_{51} + 432 \cdot \gamma_8 \cdot \gamma_{23} + 10800 \cdot \gamma_8 \cdot \gamma_{21} + 432 \cdot \gamma_8 \cdot \gamma_{25} + 216 \cdot \gamma_8 \cdot \gamma_{26} + 4704 \cdot \gamma_8^2 \cdot \gamma_{10} + 192 \cdot \gamma_9^2 \cdot \gamma_{10} + 19 \\
& + \lambda^3 \cdot (240 \cdot \gamma_9 \cdot \gamma_{23} + 1440 \cdot \gamma_8 \cdot \gamma_9^2) \cdot B^4 A^4 \\
& + \lambda^3 \cdot (864 \cdot \gamma_9 \cdot \gamma_{23} + 192 \cdot \gamma_{10} \cdot \gamma_{23} + 192 \cdot \gamma_9 \cdot \gamma_{25} + 8640 \cdot \gamma_8 \cdot \gamma_9^2 + 1920 \cdot \gamma_8 \cdot \gamma_9 \cdot \gamma_{10}) \cdot B^3 A^3 \\
& + \lambda^2 \cdot (384 \cdot \gamma_8^2 + 96 \cdot \gamma_9^2) \cdot B^3 A^3 \\
& + \lambda^3 \cdot (576 \cdot \gamma_9 \cdot \gamma_{23} + 288 \cdot \gamma_{10} \cdot \gamma_{23} + 432 \cdot \gamma_9 \cdot \gamma_{25} + 144 \cdot \gamma_9 \cdot \gamma_{26} + 144 \cdot \gamma_{10} \cdot \gamma_{25} + 12960 \cdot \gamma_8 \cdot \gamma_9^2 + 6912 \cdot \gamma_8 \cdot \gamma_9 \cdot \\
& + \lambda^2 \cdot (1728 \cdot \gamma_8^2 + 216 \cdot \gamma_9^2 + 144 \cdot \gamma_9 \cdot \gamma_{10}) \cdot B^2 A^2 \\
& + \lambda^2 \cdot (2304 \cdot \gamma_8^2 + 72 \cdot \gamma_9^2 + 144 \cdot \gamma_9 \cdot \gamma_{10} + 48 \cdot \gamma_{10}^2) \cdot B A \\
& + \lambda^3 \cdot (144 \cdot \gamma_9 \cdot \gamma_{25} + 144 \cdot \gamma_9 \cdot \gamma_{26} + 144 \cdot \gamma_{10} \cdot \gamma_{25} + 96 \cdot \gamma_{10} \cdot \gamma_{26} + 4320 \cdot \gamma_8 \cdot \gamma_9^2 + 5184 \cdot \gamma_8 \cdot \gamma_9 \cdot \gamma_{10} + 1152 \cdot \gamma_8 \cdot \gamma_1 \\
& + \lambda^2 \cdot (576 \cdot \gamma_8^2 + 24 \cdot \gamma_{10}^2) \\
& + \lambda^3 \cdot (48 \cdot \gamma_{10} \cdot \gamma_{26} + 576 \cdot \gamma_8 \cdot \gamma_9 \cdot \gamma_{10} + 288 \cdot \gamma_8 \cdot \gamma_{10}^2)
\end{aligned}
$$

$$6 \cdot \left(H_4 - U^\dagger H_0 U\right) \quad = \quad 6 * (\Lambda_4)$$

$$= \quad 6 \cdot \left(\tfrac{\lambda}{4}(A+B)^4 - \left([-X,H_0] + \tfrac{1}{2!}[-X,[-X,H_0]] + \tfrac{1}{3!}[-X,[-X,[-X,H_0]]]\right)\right)$$

$$
\begin{aligned}
= \quad & \lambda^3 \cdot (-48 \cdot \gamma_{42} + 72 \cdot \gamma_9 \cdot \gamma_{21} - 48 \cdot \gamma_8 \cdot \gamma_9^2) \cdot (B^8 + A^8) + \lambda^3 \cdot (-48 \cdot \gamma_{32}) \cdot (B^8 - A^8) \\
& + \lambda^3 \cdot (-36 \cdot \gamma_{43} + 48 \cdot \gamma_8 \cdot \gamma_{23} - 576 \cdot \gamma_8^2 \cdot \gamma_9) \cdot (B^7 A + B A^7) + \lambda^3 \cdot (-36 \cdot \gamma_{33}) \cdot (B^7 A - BA \\
& + \lambda^3 \cdot (-24 \cdot \gamma_{44} - 432 \cdot \gamma_9 \cdot \gamma_{21} - 1536 \cdot \gamma_8^3 - 384 \cdot \gamma_8 \cdot \gamma_9^2) \cdot (B^6 A^2 + B^2 A^6) + \lambda^3 \cdot (-24 \cdot \gamma \\
& + \lambda^3 \cdot (-12 \cdot \gamma_{45} - 288 \cdot \gamma_8 \cdot \gamma_{23} - 720 \cdot \gamma_8 \cdot \gamma_{21} - 1728 \cdot \gamma_8^2 \cdot \gamma_9 - 192 \cdot \gamma_9^3) \cdot (B^5 A^3 + B^3 A^5) \\
& + \lambda^2 \cdot (-36 \cdot \gamma_{21} + 24 \cdot \gamma_8 \cdot \gamma_9) \cdot (B^6 + A^6) \\
& + \lambda^3 \cdot (-36 \cdot \gamma_{46} + 72 \cdot \gamma_8 \cdot \gamma_{23} + 24 \cdot \gamma_8 \cdot \gamma_{25} - 1728 \cdot \gamma_8^2 \cdot \gamma_9 - 192 \cdot \gamma_8^2 \cdot \gamma_{10}) \cdot (B^6 + A^6) + \lambda \\
& + \lambda^3 \cdot (-24 \cdot \gamma_{47} - 2160 \cdot \gamma_9 \cdot \gamma_{21} - 288 \cdot \gamma_{10} \cdot \gamma_{21} - 9216 \cdot \gamma_8^3 - 1440 \cdot \gamma_8 \cdot \gamma_9^2 - 576 \cdot \gamma_8 \cdot \gamma_9 \cdot \gamma_1 \\
& + \lambda^2 \cdot (-12 \cdot \gamma_{23} - 216 \cdot \gamma_8 \cdot \gamma_9) \cdot (B^4 A^2 + B^2 A^4) \\
& + \lambda^3 \cdot (-12 \cdot \gamma_{48} - 1296 \cdot \gamma_8 \cdot \gamma_{23} - 5400 \cdot \gamma_8 \cdot \gamma_{21} - 216 \cdot \gamma_8 \cdot \gamma_{25} - 10944 \cdot \gamma_8^2 \cdot \gamma_9 - 864 \cdot \gamma_9^3 - \\
& + \lambda \cdot (1.5 - 24 \cdot \gamma_8) \cdot (B^4 + A^4) \\
& + \lambda^3 \cdot (-24 \cdot \gamma_{49} - 2880 \cdot \gamma_9 \cdot \gamma_{21} - 720 \cdot \gamma_{10} \cdot \gamma_{21} - 13056 \cdot \gamma_8^3 - 480 \cdot \gamma_8 \cdot \gamma_9^2 - 960 \cdot \gamma_8 \cdot \gamma_9 \cdot \gamma_1 \\
& + \lambda \cdot (6 - 12 \cdot \gamma_9) \cdot (B^3 A + B A^3) \\
& + \lambda^2 \cdot (-12 \cdot \gamma_{25} - 648 \cdot \gamma_8 \cdot \gamma_9 - 144 \cdot \gamma_8 \cdot \gamma_{10}) \cdot (B^3 A + B A^3) \\
& + \lambda^3 \cdot (-12 \cdot \gamma_{50} - 1728 \cdot \gamma_8 \cdot \gamma_{23} - 14400 \cdot \gamma_8 \cdot \gamma_{21} - 648 \cdot \gamma_8 \cdot \gamma_{25} - 144 \cdot \gamma_8 \cdot \gamma_{26} - 17760 \cdot \gamma_8^2 \\
& + \lambda \cdot (9 - 12 \cdot \gamma_{10}) \cdot (B^2 + A^2) \\
& + \lambda^2 \cdot (-12 \cdot \gamma_{26} - 432 \cdot \gamma_8 \cdot \gamma_9 - 216 \cdot \gamma_8 \cdot \gamma_{10}) \cdot (B^2 + A^2) \\
& + \lambda^3 \cdot (-12 \cdot \gamma_{51} - 432 \cdot \gamma_8 \cdot \gamma_{23} - 10800 \cdot \gamma_8 \cdot \gamma_{21} - 432 \cdot \gamma_8 \cdot \gamma_{25} - 216 \cdot \gamma_8 \cdot \gamma_{26} - 4704 \cdot \gamma_8^2 \cdot \gamma \\
& + \lambda^3 \cdot (-240 \cdot \gamma_9 \cdot \gamma_{23} - 1440 \cdot \gamma_8 \cdot \gamma_9^2) \cdot B^4 A^4 \\
& + \lambda^3 \cdot (-864 \cdot \gamma_9 \cdot \gamma_{23} - 192 \cdot \gamma_{10} \cdot \gamma_{23} - 192 \cdot \gamma_9 \cdot \gamma_{25} - 8640 \cdot \gamma_8 \cdot \gamma_9^2 - 1920 \cdot \gamma_8 \cdot \gamma_9 \cdot \gamma_{10}) \cdot B^3 A \\
& + \lambda^2 \cdot (-384 \cdot \gamma_8^2 - 96 \cdot \gamma_9^2) \cdot B^3 A^3 \\
& + \lambda \cdot (9) \cdot B^2 A^2 \\
& + \lambda^3 \cdot (-576 \cdot \gamma_9 \cdot \gamma_{23} - 288 \cdot \gamma_{10} \cdot \gamma_{23} - 432 \cdot \gamma_9 \cdot \gamma_{25} - 144 \cdot \gamma_9 \cdot \gamma_{26} - 144 \cdot \gamma_{10} \cdot \gamma_{25} - 12960 \\
& + \lambda^2 \cdot (-1728 \cdot \gamma_8^2 - 216 \cdot \gamma_9^2 - 144 \cdot \gamma_9 \cdot \gamma_{10}) \cdot B^2 A^2 \\
& + \lambda \cdot (18) \cdot BA \\
& + \lambda^2 \cdot (-2304 \cdot \gamma_8^2 - 72 \cdot \gamma_9^2 - 144 \cdot \gamma_9 \cdot \gamma_{10} - 48 \cdot \gamma_{10}^2) \cdot BA \\
& + \lambda^3 \cdot (-144 \cdot \gamma_9 \cdot \gamma_{25} - 144 \cdot \gamma_9 \cdot \gamma_{26} - 144 \cdot \gamma_{10} \cdot \gamma_{25} - 96 \cdot \gamma_{10} \cdot \gamma_{26} - 4320 \cdot \gamma_8 \cdot \gamma_9^2 - 5184 \cdot \gamma \\
& + \lambda \cdot (4.5) \\
& + \lambda^2 \cdot (-576 \cdot \gamma_8^2 - 24 \cdot \gamma_{10}^2) \\
& + \lambda^3 \cdot (-48 \cdot \gamma_{10} \cdot \gamma_{26} - 576 \cdot \gamma_8 \cdot \gamma_9 \cdot \gamma_{10} - 288 \cdot \gamma_8 \cdot \gamma_{10}^2)
\end{aligned}
$$