$$\mathbf{tt} = -\left(\left(2\, e^{2\gamma\hbar l_{11} t_1+\gamma\hbar l_{12} t_1+2\gamma\hbar l_{21} t_1+\gamma\hbar l_{22} t_1+2\gamma\hbar l_{31} t_1+\gamma\hbar l_{32} t_1}\, \gamma\hbar\, l_{11} t_1\right) \Big/ \left(-e^{2\gamma\hbar l_{11} t_1+\gamma\hbar l_{12} t_1+2\gamma\hbar l_{21} t_1+\gamma\hbar l_{22} t_1+2\gamma\hbar l_{31} t_1+\gamma\hbar l_{32} t_1} - e^{2\gamma\hbar l_{11} t_1+\gamma\hbar l_{12} t_1+2\gamma\hbar l_{21} t_1+\gamma\hbar l_{22} t_1+2\gamma\hbar l_{31} t_1+\gamma\hbar l_{32} t_1}\, \hbar\, t_1 \gamma_{21} - e^{2\gamma(\hbar l_{11} t_1+\hbar l_{21} t_1+\hbar l_{31} t_1)}\, \hbar\, t_1 \gamma_{31} + e^{2\gamma\hbar l_{11} t_1+\gamma\hbar l_{12} t_1+2\gamma\hbar l_{21} t_1+\gamma\hbar l_{22} t_1+2\gamma\hbar l_{31} t_1+\gamma\hbar l_{32} t_1}\, \hbar^2 t_1^2 \gamma_{22}\gamma_{31} - e^{2\gamma\hbar l_{11} t_1+\gamma\hbar l_{12} t_1+2\gamma\hbar l_{21} t_1+\gamma\hbar l_{22} t_1+2\gamma\hbar l_{31} t_1+\gamma\hbar l_{32} t_1}\, \hbar\, t_1 \gamma_{32} - e^{2\gamma\hbar l_{11} t_1+\gamma\hbar l_{12} t_1+2\gamma\hbar l_{21} t_1+\gamma\hbar l_{22} t_1+2\gamma\hbar l_{31} t_1+\gamma\hbar l_{32} t_1}\, \hbar^2 t_1^2 \gamma_{21}\gamma_{32}\right)\right)$$

$$-\left(\left(2\, e^{2\gamma\hbar l_{11} t_1+\gamma\hbar l_{12} t_1+2\gamma\hbar l_{21} t_1+\gamma\hbar l_{22} t_1+2\gamma\hbar l_{31} t_1+\gamma\hbar l_{32} t_1}\, \gamma\hbar\, l_{11} t_1\right) \Big/ \left(-e^{2\gamma\hbar l_{11} t_1+\gamma\hbar l_{12} t_1+2\gamma\hbar l_{21} t_1+\gamma\hbar l_{22} t_1+2\gamma\hbar l_{31} t_1+\gamma\hbar l_{32} t_1} - e^{2\gamma\hbar l_{11} t_1+\gamma\hbar l_{12} t_1+2\gamma\hbar l_{21} t_1+\gamma\hbar l_{22} t_1+2\gamma\hbar l_{31} t_1+\gamma\hbar l_{32} t_1}\, \hbar\, t_1 \gamma_{21} - e^{2\gamma(\hbar l_{11} t_1+\hbar l_{21} t_1+\hbar l_{31} t_1)}\, \hbar\, t_1 \gamma_{31} + e^{2\gamma\hbar l_{11} t_1+\gamma\hbar l_{12} t_1+2\gamma\hbar l_{21} t_1+\gamma\hbar l_{22} t_1+2\gamma\hbar l_{31} t_1+\gamma\hbar l_{32} t_1}\, \hbar^2 t_1^2 \gamma_{22}\gamma_{31} - e^{2\gamma\hbar l_{11} t_1+\gamma\hbar l_{12} t_1+2\gamma\hbar l_{21} t_1+\gamma\hbar l_{22} t_1+2\gamma\hbar l_{31} t_1+\gamma\hbar l_{32} t_1}\, \hbar\, t_1 \gamma_{32} - e^{2\gamma\hbar l_{11} t_1+\gamma\hbar l_{12} t_1+2\gamma\hbar l_{21} t_1+\gamma\hbar l_{22} t_1+2\gamma\hbar l_{31} t_1+\gamma\hbar l_{32} t_1}\, \hbar^2 t_1^2 \gamma_{21}\gamma_{32}\right)\right)$$

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Together[tt]
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$$\left(2\, e^{2\gamma\hbar l_{11} t_1+\gamma\hbar l_{12} t_1+2\gamma\hbar l_{21} t_1+\gamma\hbar l_{22} t_1+2\gamma\hbar l_{31} t_1+\gamma\hbar l_{32} t_1}\, \gamma\hbar\, l_{11} t_1\right) \Big/ \left(e^{2\gamma\hbar l_{11} t_1+\gamma\hbar l_{12} t_1+2\gamma\hbar l_{21} t_1+\gamma\hbar l_{22} t_1+2\gamma\hbar l_{31} t_1+\gamma\hbar l_{32} t_1} + e^{2\gamma\hbar l_{11} t_1+\gamma\hbar l_{12} t_1+2\gamma\hbar l_{21} t_1+\gamma\hbar l_{22} t_1+2\gamma\hbar l_{31} t_1+\gamma\hbar l_{32} t_1}\, \hbar\, t_1 \gamma_{21} + e^{2\gamma(\hbar l_{11} t_1+\hbar l_{21} t_1+\hbar l_{31} t_1)}\, \hbar\, t_1 \gamma_{31} - e^{2\gamma\hbar l_{11} t_1+\gamma\hbar l_{12} t_1+2\gamma\hbar l_{21} t_1+\gamma\hbar l_{22} t_1+2\gamma\hbar l_{31} t_1+\gamma\hbar l_{32} t_1}\, \hbar^2 t_1^2 \gamma_{22}\gamma_{31} + e^{2\gamma\hbar l_{11} t_1+\gamma\hbar l_{12} t_1+2\gamma\hbar l_{21} t_1+\gamma\hbar l_{22} t_1+2\gamma\hbar l_{31} t_1+\gamma\hbar l_{32} t_1}\, \hbar\, t_1 \gamma_{32} + e^{2\gamma\hbar l_{11} t_1+\gamma\hbar l_{12} t_1+2\gamma\hbar l_{21} t_1+\gamma\hbar l_{22} t_1+2\gamma\hbar l_{31} t_1+\gamma\hbar l_{32} t_1}\, \hbar^2 t_1^2 \gamma_{21}\gamma_{32}\right)$$

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Simplify[tt]
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$$\left(2\gamma\hbar\, l_{11} t_1\right) \Big/ \left(1 + \hbar\, t_1 \left(\gamma_{21} + e^{-\gamma\hbar(l_{12}+l_{22}+l_{32}) t_1}\gamma_{31} + \gamma_{32}\right) + \hbar^2 t_1^2 \left(-\gamma_{22}\gamma_{31} + \gamma_{21}\gamma_{32}\right)\right)$$

$$\begin{aligned}
\mathbf{tt1} = \Big(& e^{-\gamma\hbar t_1 (10\lambda_{11}+6\lambda_{12}+\lambda_{13}+10\lambda_{21}+6\lambda_{22}+\lambda_{23}+10\lambda_{31}+6\lambda_{32}+\lambda_{33})} \\
&\Big(e^{6\gamma\hbar t_1 (2\lambda_{11}+\lambda_{12}+2\lambda_{21}+\lambda_{22}+2\lambda_{31}+\lambda_{32})}\, \hbar\, x_1 y_1 \gamma_{11} + e^{\gamma\hbar t_1 (12\lambda_{11}+7\lambda_{12}+12\lambda_{21}+7\lambda_{22}+12\lambda_{31}+7\lambda_{32})}\, \hbar\, x_1 y_1 \gamma_{12} + \\
&e^{\gamma\hbar t_1 (12\lambda_{11}+7\lambda_{12}+\lambda_{13}+12\lambda_{21}+7\lambda_{22}+\lambda_{23}+12\lambda_{31}+7\lambda_{32}+\lambda_{33})}\, \hbar\, x_1 y_1 \gamma_{13} + \\
&e^{\gamma\hbar t_1 (11\lambda_{11}+6\lambda_{12}+11\lambda_{21}+6\lambda_{22}+11\lambda_{31}+6\lambda_{32})}\, \hbar\, x_1 y_1 \gamma_{21} + e^{\gamma\hbar t_1 (12\lambda_{11}+7\lambda_{12}+12\lambda_{21}+7\lambda_{22}+12\lambda_{31}+7\lambda_{32})} \\
&\hbar^2 t_1 x_1 y_1 \gamma_{12}\gamma_{21} + e^{\gamma\hbar t_1 (12\lambda_{11}+7\lambda_{12}+\lambda_{13}+12\lambda_{21}+7\lambda_{22}+\lambda_{23}+12\lambda_{31}+7\lambda_{32}+\lambda_{33})}\, \hbar^2 t_1 x_1 y_1 \gamma_{13}\gamma_{21} + \\
&e^{\gamma\hbar t_1 (11\lambda_{11}+7\lambda_{12}+11\lambda_{21}+7\lambda_{22}+11\lambda_{31}+7\lambda_{32})}\, \hbar\, x_1 y_1 \gamma_{22} - e^{\gamma\hbar t_1 (12\lambda_{11}+7\lambda_{12}+12\lambda_{21}+7\lambda_{22}+12\lambda_{31}+7\lambda_{32})} \\
&\hbar^2 t_1 x_1 y_1 \gamma_{11}\gamma_{22} + e^{\gamma\hbar t_1 (11\lambda_{11}+7\lambda_{12}+\lambda_{13}+11\lambda_{21}+7\lambda_{22}+\lambda_{23}+11\lambda_{31}+7\lambda_{32}+\lambda_{33})}\, \hbar\, x_1 y_1 \gamma_{23} - \\
&e^{\gamma\hbar t_1 (12\lambda_{11}+7\lambda_{12}+\lambda_{13}+12\lambda_{21}+7\lambda_{22}+\lambda_{23}+12\lambda_{31}+7\lambda_{32}+\lambda_{33})}\, \hbar^2 t_1 x_1 y_1 \gamma_{11}\gamma_{23} + \\
&e^{\gamma\hbar t_1 (11\lambda_{11}+5\lambda_{12}+11\lambda_{21}+5\lambda_{22}+11\lambda_{31}+5\lambda_{32})}\, \hbar\, x_1 y_1 \gamma_{31} + e^{\gamma\hbar t_1 (12\lambda_{11}+6\lambda_{12}+\lambda_{13}+12\lambda_{21}+6\lambda_{22}+\lambda_{23}+12\lambda_{31}+6\lambda_{32}+\lambda_{33})} \\
&\hbar^2 t_1 x_1 y_1 \gamma_{13}\gamma_{31} - e^{\gamma\hbar t_1 (11\lambda_{11}+6\lambda_{12}+11\lambda_{21}+6\lambda_{22}+11\lambda_{31}+6\lambda_{32})}\, \hbar^2 t_1 x_1 y_1 \gamma_{22}\gamma_{31} - \\
&e^{\gamma\hbar t_1 (12\lambda_{11}+7\lambda_{12}+\lambda_{13}+12\lambda_{21}+7\lambda_{22}+\lambda_{23}+12\lambda_{31}+7\lambda_{32}+\lambda_{33})}\, \hbar^3 t_1^2 x_1 y_1 \gamma_{13}\gamma_{22}\gamma_{31} + \\
&e^{\gamma\hbar t_1 (12\lambda_{11}+7\lambda_{12}+\lambda_{13}+12\lambda_{21}+7\lambda_{22}+\lambda_{23}+12\lambda_{31}+7\lambda_{32}+\lambda_{33})}\, \hbar^3 t_1^2 x_1 y_1 \gamma_{12}\gamma_{23}\gamma_{31} + \\
&e^{\gamma\hbar t_1 (11\lambda_{11}+6\lambda_{12}+11\lambda_{21}+6\lambda_{22}+11\lambda_{31}+6\lambda_{32})}\, \hbar\, x_1 y_1 \gamma_{32} + e^{\gamma\hbar t_1 (12\lambda_{11}+7\lambda_{12}+\lambda_{13}+12\lambda_{21}+7\lambda_{22}+\lambda_{23}+12\lambda_{31}+7\lambda_{32}+\lambda_{33})} \\
&\hbar^2 t_1 x_1 y_1 \gamma_{13}\gamma_{32} + e^{\gamma\hbar t_1 (11\lambda_{11}+6\lambda_{12}+11\lambda_{21}+6\lambda_{22}+11\lambda_{31}+6\lambda_{32})}\, \hbar^2 t_1 x_1 y_1 \gamma_{21}\gamma_{32} + \\
&e^{\gamma\hbar t_1 (12\lambda_{11}+7\lambda_{12}+\lambda_{13}+12\lambda_{21}+7\lambda_{22}+\lambda_{23}+12\lambda_{31}+7\lambda_{32}+\lambda_{33})}\, \hbar^3 t_1^2 x_1 y_1 \gamma_{13}\gamma_{21}\gamma_{32} + \\
&e^{\gamma\hbar t_1 (11\lambda_{11}+7\lambda_{12}+\lambda_{13}+11\lambda_{21}+7\lambda_{22}+\lambda_{23}+11\lambda_{31}+7\lambda_{32}+\lambda_{33})}\, \hbar^2 t_1 x_1 y_1 \gamma_{23}\gamma_{32} - \\
&e^{\gamma\hbar t_1 (12\lambda_{11}+7\lambda_{12}+\lambda_{13}+12\lambda_{21}+7\lambda_{22}+\lambda_{23}+12\lambda_{31}+7\lambda_{32}+\lambda_{33})}\, \hbar^3 t_1^2 x_1 y_1 \gamma_{11}\gamma_{23}\gamma_{32} + \\
&e^{\gamma\hbar t_1 (11\lambda_{11}+6\lambda_{12}+\lambda_{13}+11\lambda_{21}+6\lambda_{22}+\lambda_{23}+11\lambda_{31}+6\lambda_{32}+\lambda_{33})}\, \hbar\, x_1 y_1 \gamma_{33} - \\
&e^{\gamma\hbar t_1 (12\lambda_{11}+6\lambda_{12}+\lambda_{13}+12\lambda_{21}+6\lambda_{22}+\lambda_{23}+12\lambda_{31}+6\lambda_{32}+\lambda_{33})}\, \hbar^2 t_1 x_1 y_1 \gamma_{11}\gamma_{33} - \\
&e^{\gamma\hbar t_1 (12\lambda_{11}+7\lambda_{12}+\lambda_{13}+12\lambda_{21}+7\lambda_{22}+\lambda_{23}+12\lambda_{31}+7\lambda_{32}+\lambda_{33})}\, \hbar^2 t_1 x_1 y_1 \gamma_{12}\gamma_{33} - \\
&e^{\gamma\hbar t_1 (12\lambda_{11}+7\lambda_{12}+\lambda_{13}+12\lambda_{21}+7\lambda_{22}+\lambda_{23}+12\lambda_{31}+7\lambda_{32}+\lambda_{33})}\, \hbar^3 t_1^2 x_1 y_1 \gamma_{12}\gamma_{21}\gamma_{33} - \\
&e^{\gamma\hbar t_1 (11\lambda_{11}+7\lambda_{12}+\lambda_{13}+11\lambda_{21}+7\lambda_{22}+\lambda_{23}+11\lambda_{31}+7\lambda_{32}+\lambda_{33})}\, \hbar^2 t_1 x_1 y_1 \gamma_{22}\gamma_{33} + \\
&e^{\gamma\hbar t_1 (12\lambda_{11}+7\lambda_{12}+\lambda_{13}+12\lambda_{21}+7\lambda_{22}+\lambda_{23}+12\lambda_{31}+7\lambda_{32}+\lambda_{33})}\, \hbar^3 t_1^2 x_1 y_1 \gamma_{11}\gamma_{22}\gamma_{33} + \\
&e^{\gamma\hbar t_1 (12\lambda_{11}+7\lambda_{12}+\lambda_{13}+12\lambda_{21}+7\lambda_{22}+\lambda_{23}+12\lambda_{31}+7\lambda_{32}+\lambda_{33})}\, \hbar\, a_1 t_1 \lambda_{11} + \\
&e^{\gamma\hbar t_1 (12\lambda_{11}+7\lambda_{12}+\lambda_{13}+12\lambda_{21}+7\lambda_{22}+\lambda_{23}+12\lambda_{31}+7\lambda_{32}+\lambda_{33})}\, \hbar^2 a_1 t_1^2 \gamma_{21}\lambda_{11} +
\end{aligned}$$

$$e^{\gamma \hbar t_1 (12 \lambda_{11}+6 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+6 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+6 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{31} \lambda_{11} -$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{22} \gamma_{31} \lambda_{11} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{32} \lambda_{11} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{21} \gamma_{32} \lambda_{11} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar a_1 t_1 \lambda_{12} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{21} \lambda_{12} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+6 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+6 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+6 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{31} \lambda_{12} -$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{22} \gamma_{31} \lambda_{12} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{32} \lambda_{12} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{21} \gamma_{32} \lambda_{12} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar a_1 t_1 \lambda_{13} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{21} \lambda_{13} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+6 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+6 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+6 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{31} \lambda_{13} -$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{22} \gamma_{31} \lambda_{13} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{32} \lambda_{13} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{21} \gamma_{32} \lambda_{13} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar a_1 t_1 \lambda_{21} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{21} \lambda_{21} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+6 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+6 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+6 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{31} \lambda_{21} -$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{22} \gamma_{31} \lambda_{21} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{32} \lambda_{21} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{21} \gamma_{32} \lambda_{21} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar a_1 t_1 \lambda_{22} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{21} \lambda_{22} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+6 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+6 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+6 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{31} \lambda_{22} -$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{22} \gamma_{31} \lambda_{22} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{32} \lambda_{22} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{21} \gamma_{32} \lambda_{22} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar a_1 t_1 \lambda_{23} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{21} \lambda_{23} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+6 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+6 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+6 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{31} \lambda_{23} -$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{22} \gamma_{31} \lambda_{23} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{32} \lambda_{23} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{21} \gamma_{32} \lambda_{23} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar a_1 t_1 \lambda_{31} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{21} \lambda_{31} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+6 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+6 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+6 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{31} \lambda_{31} -$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{22} \gamma_{31} \lambda_{31} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{32} \lambda_{31} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{21} \gamma_{32} \lambda_{31} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar a_1 t_1 \lambda_{32} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{21} \lambda_{32} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+6 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+6 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+6 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{31} \lambda_{32} -$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{22} \gamma_{31} \lambda_{32} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{32} \lambda_{32} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{21} \gamma_{32} \lambda_{32} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar a_1 t_1 \lambda_{33} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{21} \lambda_{33} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+6 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+6 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+6 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{31} \lambda_{33} -$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{22} \gamma_{31} \lambda_{33} +$$

$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{32} \lambda_{33} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{21} \gamma_{32} \lambda_{33}\Big)\Big) \Big/$$
$$\Big(e^{\gamma \hbar t_1 (2 \lambda_{11}+\lambda_{12}+2 \lambda_{21}+\lambda_{22}+2 \lambda_{31}+\lambda_{32})} + e^{\gamma \hbar t_1 (2 \lambda_{11}+\lambda_{12}+2 \lambda_{21}+\lambda_{22}+2 \lambda_{31}+\lambda_{32})} \hbar t_1 \gamma_{21} +$$
$$e^{2 \gamma \hbar t_1 (\lambda_{11}+\lambda_{21}+\lambda_{31})} \hbar t_1 \gamma_{31} - e^{\gamma \hbar t_1 (2 \lambda_{11}+\lambda_{12}+2 \lambda_{21}+\lambda_{22}+2 \lambda_{31}+\lambda_{32})} \hbar^2 t_1^2 \gamma_{22} \gamma_{31} +$$
$$e^{\gamma \hbar t_1 (2 \lambda_{11}+\lambda_{12}+2 \lambda_{21}+\lambda_{22}+2 \lambda_{31}+\lambda_{32})} \hbar t_1 \gamma_{32} + e^{\gamma \hbar t_1 (2 \lambda_{11}+\lambda_{12}+2 \lambda_{21}+\lambda_{22}+2 \lambda_{31}+\lambda_{32})} \hbar^2 t_1^2 \gamma_{21} \gamma_{32}\Big);$$

$$tt2 = \Big(e^{-\gamma \hbar t_1 (2 \lambda_{11}+9 \lambda_{12}+5 \lambda_{13}+2 \lambda_{21}+9 \lambda_{22}+5 \lambda_{23}+2 \lambda_{31}+9 \lambda_{32}+5 \lambda_{33})} \Big(e^{\gamma \hbar t_1 (2 \lambda_{11}+10 \lambda_{12}+5 \lambda_{13}+2 \lambda_{21}+10 \lambda_{22}+5 \lambda_{23}+2 \lambda_{31}+10 \lambda_{32}+5 \lambda_{33})}$$
$$\hbar x_1 y_1 \gamma_{11} + e^{\gamma \hbar t_1 (2 \lambda_{11}+11 \lambda_{12}+5 \lambda_{13}+2 \lambda_{21}+11 \lambda_{22}+5 \lambda_{23}+2 \lambda_{31}+11 \lambda_{32}+5 \lambda_{33})} \hbar x_1 y_1 \gamma_{12} +$$
$$e^{\gamma \hbar t_1 (2 \lambda_{11}+11 \lambda_{12}+6 \lambda_{13}+2 \lambda_{21}+11 \lambda_{22}+6 \lambda_{23}+2 \lambda_{31}+11 \lambda_{32}+6 \lambda_{33})} \hbar x_1 y_1 \gamma_{13} +$$
$$e^{\gamma \hbar t_1 (\lambda_{11}+10 \lambda_{12}+5 \lambda_{13}+\lambda_{21}+10 \lambda_{22}+5 \lambda_{23}+\lambda_{31}+10 \lambda_{32}+5 \lambda_{33})} \hbar x_1 y_1 \gamma_{21} +$$
$$e^{\gamma \hbar t_1 (2 \lambda_{11}+11 \lambda_{12}+5 \lambda_{13}+2 \lambda_{21}+11 \lambda_{22}+5 \lambda_{23}+2 \lambda_{31}+11 \lambda_{32}+5 \lambda_{33})} \hbar^2 t_1 x_1 y_1 \gamma_{12} \gamma_{21} +$$
$$e^{\gamma \hbar t_1 (2 \lambda_{11}+11 \lambda_{12}+6 \lambda_{13}+2 \lambda_{21}+11 \lambda_{22}+6 \lambda_{23}+2 \lambda_{31}+11 \lambda_{32}+6 \lambda_{33})} \hbar^2 t_1 x_1 y_1 \gamma_{13} \gamma_{21} +$$
$$e^{\gamma \hbar t_1 (\lambda_{11}+11 \lambda_{12}+5 \lambda_{13}+\lambda_{21}+11 \lambda_{22}+5 \lambda_{23}+\lambda_{31}+11 \lambda_{32}+5 \lambda_{33})} \hbar x_1 y_1 \gamma_{22} -$$
$$e^{\gamma \hbar t_1 (2 \lambda_{11}+11 \lambda_{12}+5 \lambda_{13}+2 \lambda_{21}+11 \lambda_{22}+5 \lambda_{23}+2 \lambda_{31}+11 \lambda_{32}+5 \lambda_{33})} \hbar^2 t_1 x_1 y_1 \gamma_{11} \gamma_{22} +$$
$$e^{\gamma \hbar t_1 (\lambda_{11}+11 \lambda_{12}+6 \lambda_{13}+\lambda_{21}+11 \lambda_{22}+6 \lambda_{23}+\lambda_{31}+11 \lambda_{32}+6 \lambda_{33})} \hbar x_1 y_1 \gamma_{23} -$$
$$e^{\gamma \hbar t_1 (2 \lambda_{11}+11 \lambda_{12}+6 \lambda_{13}+2 \lambda_{21}+11 \lambda_{22}+6 \lambda_{23}+2 \lambda_{31}+11 \lambda_{32}+6 \lambda_{33})} \hbar^2 t_1 x_1 y_1 \gamma_{11} \gamma_{23} +$$
$$e^{\gamma \hbar t_1 (\lambda_{11}+9 \lambda_{12}+5 \lambda_{13}+\lambda_{21}+9 \lambda_{22}+5 \lambda_{23}+\lambda_{31}+9 \lambda_{32}+5 \lambda_{33})} \hbar x_1 y_1 \gamma_{31} +$$
$$e^{2 \gamma \hbar t_1 (\lambda_{11}+5 \lambda_{12}+3 \lambda_{13}+\lambda_{21}+5 \lambda_{22}+3 \lambda_{23}+\lambda_{31}+5 \lambda_{32}+3 \lambda_{33})} \hbar^2 t_1 x_1 y_1 \gamma_{13} \gamma_{31} -$$
$$e^{\gamma \hbar t_1 (\lambda_{11}+10 \lambda_{12}+5 \lambda_{13}+\lambda_{21}+10 \lambda_{22}+5 \lambda_{23}+\lambda_{31}+10 \lambda_{32}+5 \lambda_{33})} \hbar^2 t_1 x_1 y_1 \gamma_{22} \gamma_{31} -$$
$$e^{\gamma \hbar t_1 (2 \lambda_{11}+11 \lambda_{12}+6 \lambda_{13}+2 \lambda_{21}+11 \lambda_{22}+6 \lambda_{23}+2 \lambda_{31}+11 \lambda_{32}+6 \lambda_{33})} \hbar^3 t_1^2 x_1 y_1 \gamma_{13} \gamma_{22} \gamma_{31} +$$
$$e^{\gamma \hbar t_1 (2 \lambda_{11}+11 \lambda_{12}+6 \lambda_{13}+2 \lambda_{21}+11 \lambda_{22}+6 \lambda_{23}+2 \lambda_{31}+11 \lambda_{32}+6 \lambda_{33})} \hbar^3 t_1^2 x_1 y_1 \gamma_{12} \gamma_{23} \gamma_{31} +$$
$$e^{\gamma \hbar t_1 (\lambda_{11}+10 \lambda_{12}+5 \lambda_{13}+\lambda_{21}+10 \lambda_{22}+5 \lambda_{23}+\lambda_{31}+10 \lambda_{32}+5 \lambda_{33})} \hbar x_1 y_1 \gamma_{32} +$$
$$e^{\gamma \hbar t_1 (2 \lambda_{11}+11 \lambda_{12}+6 \lambda_{13}+2 \lambda_{21}+11 \lambda_{22}+6 \lambda_{23}+2 \lambda_{31}+11 \lambda_{32}+6 \lambda_{33})} \hbar^2 t_1 x_1 y_1 \gamma_{13} \gamma_{32} +$$
$$e^{\gamma \hbar t_1 (\lambda_{11}+10 \lambda_{12}+5 \lambda_{13}+\lambda_{21}+10 \lambda_{22}+5 \lambda_{23}+\lambda_{31}+10 \lambda_{32}+5 \lambda_{33})} \hbar^2 t_1 x_1 y_1 \gamma_{21} \gamma_{32} +$$
$$e^{\gamma \hbar t_1 (2 \lambda_{11}+11 \lambda_{12}+6 \lambda_{13}+2 \lambda_{21}+11 \lambda_{22}+6 \lambda_{23}+2 \lambda_{31}+11 \lambda_{32}+6 \lambda_{33})} \hbar^3 t_1^2 x_1 y_1 \gamma_{13} \gamma_{21} \gamma_{32} +$$
$$e^{\gamma \hbar t_1 (\lambda_{11}+11 \lambda_{12}+6 \lambda_{13}+\lambda_{21}+11 \lambda_{22}+6 \lambda_{23}+\lambda_{31}+11 \lambda_{32}+6 \lambda_{33})} \hbar^2 t_1 x_1 y_1 \gamma_{23} \gamma_{32} -$$
$$e^{\gamma \hbar t_1 (2 \lambda_{11}+11 \lambda_{12}+6 \lambda_{13}+2 \lambda_{21}+11 \lambda_{22}+6 \lambda_{23}+2 \lambda_{31}+11 \lambda_{32}+6 \lambda_{33})} \hbar^3 t_1^2 x_1 y_1 \gamma_{11} \gamma_{23} \gamma_{32} +$$
$$e^{\gamma \hbar t_1 (\lambda_{11}+10 \lambda_{12}+6 \lambda_{13}+\lambda_{21}+10 \lambda_{22}+6 \lambda_{23}+\lambda_{31}+10 \lambda_{32}+6 \lambda_{33})} \hbar x_1 y_1 \gamma_{33} -$$
$$e^{2 \gamma \hbar t_1 (\lambda_{11}+5 \lambda_{12}+3 \lambda_{13}+\lambda_{21}+5 \lambda_{22}+3 \lambda_{23}+\lambda_{31}+5 \lambda_{32}+3 \lambda_{33})} \hbar^2 t_1 x_1 y_1 \gamma_{11} \gamma_{33} -$$
$$e^{\gamma \hbar t_1 (2 \lambda_{11}+11 \lambda_{12}+6 \lambda_{13}+2 \lambda_{21}+11 \lambda_{22}+6 \lambda_{23}+2 \lambda_{31}+11 \lambda_{32}+6 \lambda_{33})} \hbar^2 t_1 x_1 y_1 \gamma_{12} \gamma_{33} -$$
$$e^{\gamma \hbar t_1 (2 \lambda_{11}+11 \lambda_{12}+6 \lambda_{13}+2 \lambda_{21}+11 \lambda_{22}+6 \lambda_{23}+2 \lambda_{31}+11 \lambda_{32}+6 \lambda_{33})} \hbar^3 t_1^2 x_1 y_1 \gamma_{12} \gamma_{21} \gamma_{33} -$$
$$e^{\gamma \hbar t_1 (\lambda_{11}+11 \lambda_{12}+6 \lambda_{13}+\lambda_{21}+11 \lambda_{22}+6 \lambda_{23}+\lambda_{31}+11 \lambda_{32}+6 \lambda_{33})} \hbar^2 t_1 x_1 y_1 \gamma_{22} \gamma_{33} +$$
$$e^{\gamma \hbar t_1 (2 \lambda_{11}+11 \lambda_{12}+6 \lambda_{13}+2 \lambda_{21}+11 \lambda_{22}+6 \lambda_{23}+2 \lambda_{31}+11 \lambda_{32}+6 \lambda_{33})} \hbar^3 t_1^2 x_1 y_1 \gamma_{11} \gamma_{22} \gamma_{33} +$$
$$e^{\gamma \hbar t_1 (2 \lambda_{11}+11 \lambda_{12}+6 \lambda_{13}+2 \lambda_{21}+11 \lambda_{22}+6 \lambda_{23}+2 \lambda_{31}+11 \lambda_{32}+6 \lambda_{33})} \hbar a_1 t_1 \lambda_{11} +$$
$$e^{\gamma \hbar t_1 (2 \lambda_{11}+11 \lambda_{12}+6 \lambda_{13}+2 \lambda_{21}+11 \lambda_{22}+6 \lambda_{23}+2 \lambda_{31}+11 \lambda_{32}+6 \lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{21} \lambda_{11} +$$
$$e^{2 \gamma \hbar t_1 (\lambda_{11}+5 \lambda_{12}+3 \lambda_{13}+\lambda_{21}+5 \lambda_{22}+3 \lambda_{23}+\lambda_{31}+5 \lambda_{32}+3 \lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{31} \lambda_{11} -$$
$$e^{\gamma \hbar t_1 (2 \lambda_{11}+11 \lambda_{12}+6 \lambda_{13}+2 \lambda_{21}+11 \lambda_{22}+6 \lambda_{23}+2 \lambda_{31}+11 \lambda_{32}+6 \lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{22} \gamma_{31} \lambda_{11} +$$
$$e^{\gamma \hbar t_1 (2 \lambda_{11}+11 \lambda_{12}+6 \lambda_{13}+2 \lambda_{21}+11 \lambda_{22}+6 \lambda_{23}+2 \lambda_{31}+11 \lambda_{32}+6 \lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{32} \lambda_{11} +$$
$$e^{\gamma \hbar t_1 (2 \lambda_{11}+11 \lambda_{12}+6 \lambda_{13}+2 \lambda_{21}+11 \lambda_{22}+6 \lambda_{23}+2 \lambda_{31}+11 \lambda_{32}+6 \lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{21} \gamma_{32} \lambda_{11} +$$
$$e^{\gamma \hbar t_1 (2 \lambda_{11}+11 \lambda_{12}+6 \lambda_{13}+2 \lambda_{21}+11 \lambda_{22}+6 \lambda_{23}+2 \lambda_{31}+11 \lambda_{32}+6 \lambda_{33})} \hbar a_1 t_1 \lambda_{12} +$$
$$e^{\gamma \hbar t_1 (2 \lambda_{11}+11 \lambda_{12}+6 \lambda_{13}+2 \lambda_{21}+11 \lambda_{22}+6 \lambda_{23}+2 \lambda_{31}+11 \lambda_{32}+6 \lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{21} \lambda_{12} +$$
$$e^{2 \gamma \hbar t_1 (\lambda_{11}+5 \lambda_{12}+3 \lambda_{13}+\lambda_{21}+5 \lambda_{22}+3 \lambda_{23}+\lambda_{31}+5 \lambda_{32}+3 \lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{31} \lambda_{12} -$$
$$e^{\gamma \hbar t_1 (2 \lambda_{11}+11 \lambda_{12}+6 \lambda_{13}+2 \lambda_{21}+11 \lambda_{22}+6 \lambda_{23}+2 \lambda_{31}+11 \lambda_{32}+6 \lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{22} \gamma_{31} \lambda_{12} +$$
$$e^{\gamma \hbar t_1 (2 \lambda_{11}+11 \lambda_{12}+6 \lambda_{13}+2 \lambda_{21}+11 \lambda_{22}+6 \lambda_{23}+2 \lambda_{31}+11 \lambda_{32}+6 \lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{32} \lambda_{12} +$$
$$e^{\gamma \hbar t_1 (2 \lambda_{11}+11 \lambda_{12}+6 \lambda_{13}+2 \lambda_{21}+11 \lambda_{22}+6 \lambda_{23}+2 \lambda_{31}+11 \lambda_{32}+6 \lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{21} \gamma_{32} \lambda_{12} +$$
$$e^{\gamma \hbar t_1 (2 \lambda_{11}+11 \lambda_{12}+6 \lambda_{13}+2 \lambda_{21}+11 \lambda_{22}+6 \lambda_{23}+2 \lambda_{31}+11 \lambda_{32}+6 \lambda_{33})} \hbar a_1 t_1 \lambda_{13} +$$
$$e^{\gamma \hbar t_1 (2 \lambda_{11}+11 \lambda_{12}+6 \lambda_{13}+2 \lambda_{21}+11 \lambda_{22}+6 \lambda_{23}+2 \lambda_{31}+11 \lambda_{32}+6 \lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{21} \lambda_{13} +$$
$$e^{2 \gamma \hbar t_1 (\lambda_{11}+5 \lambda_{12}+3 \lambda_{13}+\lambda_{21}+5 \lambda_{22}+3 \lambda_{23}+\lambda_{31}+5 \lambda_{32}+3 \lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{31} \lambda_{13} -$$
$$e^{\gamma \hbar t_1 (2 \lambda_{11}+11 \lambda_{12}+6 \lambda_{13}+2 \lambda_{21}+11 \lambda_{22}+6 \lambda_{23}+2 \lambda_{31}+11 \lambda_{32}+6 \lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{22} \gamma_{31} \lambda_{13} +$$
$$e^{\gamma \hbar t_1 (2 \lambda_{11}+11 \lambda_{12}+6 \lambda_{13}+2 \lambda_{21}+11 \lambda_{22}+6 \lambda_{23}+2 \lambda_{31}+11 \lambda_{32}+6 \lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{32} \lambda_{13} +$$
$$e^{\gamma \hbar t_1 (2 \lambda_{11}+11 \lambda_{12}+6 \lambda_{13}+2 \lambda_{21}+11 \lambda_{22}+6 \lambda_{23}+2 \lambda_{31}+11 \lambda_{32}+6 \lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{21} \gamma_{32} \lambda_{13} +$$

$$
\begin{aligned}
&e^{\gamma \hbar t_1 (2\lambda_{11}+11\lambda_{12}+6\lambda_{13}+2\lambda_{21}+11\lambda_{22}+6\lambda_{23}+2\lambda_{31}+11\lambda_{32}+6\lambda_{33})}\, \hbar\, a_1 t_1 \lambda_{21} + \\
&e^{\gamma \hbar t_1 (2\lambda_{11}+11\lambda_{12}+6\lambda_{13}+2\lambda_{21}+11\lambda_{22}+6\lambda_{23}+2\lambda_{31}+11\lambda_{32}+6\lambda_{33})}\, \hbar^2 a_1 t_1^2 \gamma_{21} \lambda_{21} + \\
&e^{2\gamma \hbar t_1 (\lambda_{11}+5\lambda_{12}+3\lambda_{13}+\lambda_{21}+5\lambda_{22}+3\lambda_{23}+\lambda_{31}+5\lambda_{32}+3\lambda_{33})}\, \hbar^2 a_1 t_1^2 \gamma_{31} \lambda_{21} - \\
&e^{\gamma \hbar t_1 (2\lambda_{11}+11\lambda_{12}+6\lambda_{13}+2\lambda_{21}+11\lambda_{22}+6\lambda_{23}+2\lambda_{31}+11\lambda_{32}+6\lambda_{33})}\, \hbar^3 a_1 t_1^3 \gamma_{22} \gamma_{31} \lambda_{21} + \\
&e^{\gamma \hbar t_1 (2\lambda_{11}+11\lambda_{12}+6\lambda_{13}+2\lambda_{21}+11\lambda_{22}+6\lambda_{23}+2\lambda_{31}+11\lambda_{32}+6\lambda_{33})}\, \hbar^2 a_1 t_1^2 \gamma_{32} \lambda_{21} + \\
&e^{\gamma \hbar t_1 (2\lambda_{11}+11\lambda_{12}+6\lambda_{13}+2\lambda_{21}+11\lambda_{22}+6\lambda_{23}+2\lambda_{31}+11\lambda_{32}+6\lambda_{33})}\, \hbar^3 a_1 t_1^3 \gamma_{21} \gamma_{32} \lambda_{21} + \\
&e^{\gamma \hbar t_1 (2\lambda_{11}+11\lambda_{12}+6\lambda_{13}+2\lambda_{21}+11\lambda_{22}+6\lambda_{23}+2\lambda_{31}+11\lambda_{32}+6\lambda_{33})}\, \hbar\, a_1 t_1 \lambda_{22} + \\
&e^{\gamma \hbar t_1 (2\lambda_{11}+11\lambda_{12}+6\lambda_{13}+2\lambda_{21}+11\lambda_{22}+6\lambda_{23}+2\lambda_{31}+11\lambda_{32}+6\lambda_{33})}\, \hbar^2 a_1 t_1^2 \gamma_{21} \lambda_{22} + \\
&e^{2\gamma \hbar t_1 (\lambda_{11}+5\lambda_{12}+3\lambda_{13}+\lambda_{21}+5\lambda_{22}+3\lambda_{23}+\lambda_{31}+5\lambda_{32}+3\lambda_{33})}\, \hbar^2 a_1 t_1^2 \gamma_{31} \lambda_{22} - \\
&e^{\gamma \hbar t_1 (2\lambda_{11}+11\lambda_{12}+6\lambda_{13}+2\lambda_{21}+11\lambda_{22}+6\lambda_{23}+2\lambda_{31}+11\lambda_{32}+6\lambda_{33})}\, \hbar^3 a_1 t_1^3 \gamma_{22} \gamma_{31} \lambda_{22} + \\
&e^{\gamma \hbar t_1 (2\lambda_{11}+11\lambda_{12}+6\lambda_{13}+2\lambda_{21}+11\lambda_{22}+6\lambda_{23}+2\lambda_{31}+11\lambda_{32}+6\lambda_{33})}\, \hbar^2 a_1 t_1^2 \gamma_{32} \lambda_{22} + \\
&e^{\gamma \hbar t_1 (2\lambda_{11}+11\lambda_{12}+6\lambda_{13}+2\lambda_{21}+11\lambda_{22}+6\lambda_{23}+2\lambda_{31}+11\lambda_{32}+6\lambda_{33})}\, \hbar^3 a_1 t_1^3 \gamma_{21} \gamma_{32} \lambda_{22} + \\
&e^{\gamma \hbar t_1 (2\lambda_{11}+11\lambda_{12}+6\lambda_{13}+2\lambda_{21}+11\lambda_{22}+6\lambda_{23}+2\lambda_{31}+11\lambda_{32}+6\lambda_{33})}\, \hbar\, a_1 t_1 \lambda_{23} + \\
&e^{\gamma \hbar t_1 (2\lambda_{11}+11\lambda_{12}+6\lambda_{13}+2\lambda_{21}+11\lambda_{22}+6\lambda_{23}+2\lambda_{31}+11\lambda_{32}+6\lambda_{33})}\, \hbar^2 a_1 t_1^2 \gamma_{21} \lambda_{23} + \\
&e^{2\gamma \hbar t_1 (\lambda_{11}+5\lambda_{12}+3\lambda_{13}+\lambda_{21}+5\lambda_{22}+3\lambda_{23}+\lambda_{31}+5\lambda_{32}+3\lambda_{33})}\, \hbar^2 a_1 t_1^2 \gamma_{31} \lambda_{23} - \\
&e^{\gamma \hbar t_1 (2\lambda_{11}+11\lambda_{12}+6\lambda_{13}+2\lambda_{21}+11\lambda_{22}+6\lambda_{23}+2\lambda_{31}+11\lambda_{32}+6\lambda_{33})}\, \hbar^3 a_1 t_1^3 \gamma_{22} \gamma_{31} \lambda_{23} + \\
&e^{\gamma \hbar t_1 (2\lambda_{11}+11\lambda_{12}+6\lambda_{13}+2\lambda_{21}+11\lambda_{22}+6\lambda_{23}+2\lambda_{31}+11\lambda_{32}+6\lambda_{33})}\, \hbar^2 a_1 t_1^2 \gamma_{32} \lambda_{23} + \\
&e^{\gamma \hbar t_1 (2\lambda_{11}+11\lambda_{12}+6\lambda_{13}+2\lambda_{21}+11\lambda_{22}+6\lambda_{23}+2\lambda_{31}+11\lambda_{32}+6\lambda_{33})}\, \hbar^3 a_1 t_1^3 \gamma_{21} \gamma_{32} \lambda_{23} + \\
&e^{\gamma \hbar t_1 (2\lambda_{11}+11\lambda_{12}+6\lambda_{13}+2\lambda_{21}+11\lambda_{22}+6\lambda_{23}+2\lambda_{31}+11\lambda_{32}+6\lambda_{33})}\, \hbar\, a_1 t_1 \lambda_{31} + \\
&e^{\gamma \hbar t_1 (2\lambda_{11}+11\lambda_{12}+6\lambda_{13}+2\lambda_{21}+11\lambda_{22}+6\lambda_{23}+2\lambda_{31}+11\lambda_{32}+6\lambda_{33})}\, \hbar^2 a_1 t_1^2 \gamma_{21} \lambda_{31} + \\
&e^{2\gamma \hbar t_1 (\lambda_{11}+5\lambda_{12}+3\lambda_{13}+\lambda_{21}+5\lambda_{22}+3\lambda_{23}+\lambda_{31}+5\lambda_{32}+3\lambda_{33})}\, \hbar^2 a_1 t_1^2 \gamma_{31} \lambda_{31} - \\
&e^{\gamma \hbar t_1 (2\lambda_{11}+11\lambda_{12}+6\lambda_{13}+2\lambda_{21}+11\lambda_{22}+6\lambda_{23}+2\lambda_{31}+11\lambda_{32}+6\lambda_{33})}\, \hbar^3 a_1 t_1^3 \gamma_{22} \gamma_{31} \lambda_{31} + \\
&e^{\gamma \hbar t_1 (2\lambda_{11}+11\lambda_{12}+6\lambda_{13}+2\lambda_{21}+11\lambda_{22}+6\lambda_{23}+2\lambda_{31}+11\lambda_{32}+6\lambda_{33})}\, \hbar^2 a_1 t_1^2 \gamma_{32} \lambda_{31} + \\
&e^{\gamma \hbar t_1 (2\lambda_{11}+11\lambda_{12}+6\lambda_{13}+2\lambda_{21}+11\lambda_{22}+6\lambda_{23}+2\lambda_{31}+11\lambda_{32}+6\lambda_{33})}\, \hbar^3 a_1 t_1^3 \gamma_{21} \gamma_{32} \lambda_{31} + \\
&e^{\gamma \hbar t_1 (2\lambda_{11}+11\lambda_{12}+6\lambda_{13}+2\lambda_{21}+11\lambda_{22}+6\lambda_{23}+2\lambda_{31}+11\lambda_{32}+6\lambda_{33})}\, \hbar\, a_1 t_1 \lambda_{32} + \\
&e^{\gamma \hbar t_1 (2\lambda_{11}+11\lambda_{12}+6\lambda_{13}+2\lambda_{21}+11\lambda_{22}+6\lambda_{23}+2\lambda_{31}+11\lambda_{32}+6\lambda_{33})}\, \hbar^2 a_1 t_1^2 \gamma_{21} \lambda_{32} + \\
&e^{2\gamma \hbar t_1 (\lambda_{11}+5\lambda_{12}+3\lambda_{13}+\lambda_{21}+5\lambda_{22}+3\lambda_{23}+\lambda_{31}+5\lambda_{32}+3\lambda_{33})}\, \hbar^2 a_1 t_1^2 \gamma_{31} \lambda_{32} - \\
&e^{\gamma \hbar t_1 (2\lambda_{11}+11\lambda_{12}+6\lambda_{13}+2\lambda_{21}+11\lambda_{22}+6\lambda_{23}+2\lambda_{31}+11\lambda_{32}+6\lambda_{33})}\, \hbar^3 a_1 t_1^3 \gamma_{22} \gamma_{31} \lambda_{32} + \\
&e^{\gamma \hbar t_1 (2\lambda_{11}+11\lambda_{12}+6\lambda_{13}+2\lambda_{21}+11\lambda_{22}+6\lambda_{23}+2\lambda_{31}+11\lambda_{32}+6\lambda_{33})}\, \hbar^2 a_1 t_1^2 \gamma_{32} \lambda_{32} + \\
&e^{\gamma \hbar t_1 (2\lambda_{11}+11\lambda_{12}+6\lambda_{13}+2\lambda_{21}+11\lambda_{22}+6\lambda_{23}+2\lambda_{31}+11\lambda_{32}+6\lambda_{33})}\, \hbar^3 a_1 t_1^3 \gamma_{21} \gamma_{32} \lambda_{32} + \\
&e^{\gamma \hbar t_1 (2\lambda_{11}+11\lambda_{12}+6\lambda_{13}+2\lambda_{21}+11\lambda_{22}+6\lambda_{23}+2\lambda_{31}+11\lambda_{32}+6\lambda_{33})}\, \hbar\, a_1 t_1 \lambda_{33} + \\
&e^{\gamma \hbar t_1 (2\lambda_{11}+11\lambda_{12}+6\lambda_{13}+2\lambda_{21}+11\lambda_{22}+6\lambda_{23}+2\lambda_{31}+11\lambda_{32}+6\lambda_{33})}\, \hbar^2 a_1 t_1^2 \gamma_{21} \lambda_{33} + \\
&e^{2\gamma \hbar t_1 (\lambda_{11}+5\lambda_{12}+3\lambda_{13}+\lambda_{21}+5\lambda_{22}+3\lambda_{23}+\lambda_{31}+5\lambda_{32}+3\lambda_{33})}\, \hbar^2 a_1 t_1^2 \gamma_{31} \lambda_{33} - \\
&e^{\gamma \hbar t_1 (2\lambda_{11}+11\lambda_{12}+6\lambda_{13}+2\lambda_{21}+11\lambda_{22}+6\lambda_{23}+2\lambda_{31}+11\lambda_{32}+6\lambda_{33})}\, \hbar^3 a_1 t_1^3 \gamma_{22} \gamma_{31} \lambda_{33} + \\
&e^{\gamma \hbar t_1 (2\lambda_{11}+11\lambda_{12}+6\lambda_{13}+2\lambda_{21}+11\lambda_{22}+6\lambda_{23}+2\lambda_{31}+11\lambda_{32}+6\lambda_{33})}\, \hbar^2 a_1 t_1^2 \gamma_{32} \lambda_{33} + \\
&e^{\gamma \hbar t_1 (2\lambda_{11}+11\lambda_{12}+6\lambda_{13}+2\lambda_{21}+11\lambda_{22}+6\lambda_{23}+2\lambda_{31}+11\lambda_{32}+6\lambda_{33})}\, \hbar^3 a_1 t_1^3 \gamma_{21} \gamma_{32} \lambda_{33}\Big)\Big) \Big/ \\
&\Big(e^{\gamma \hbar t_1 (2\lambda_{12}+\lambda_{13}+2\lambda_{22}+\lambda_{23}+2\lambda_{32}+\lambda_{33})} + e^{\gamma \hbar t_1 (2\lambda_{12}+\lambda_{13}+2\lambda_{22}+\lambda_{23}+2\lambda_{32}+\lambda_{33})}\, \hbar\, t_1 \gamma_{21} + \\
&e^{\gamma \hbar t_1 (\lambda_{12}+\lambda_{13}+\lambda_{22}+\lambda_{23}+\lambda_{32}+\lambda_{33})}\, \hbar\, t_1 \gamma_{31} - e^{\gamma \hbar t_1 (2\lambda_{12}+\lambda_{13}+2\lambda_{22}+\lambda_{23}+2\lambda_{32}+\lambda_{33})}\, \hbar^2 t_1^2 \gamma_{22} \gamma_{31} + \\
&e^{\gamma \hbar t_1 (2\lambda_{12}+\lambda_{13}+2\lambda_{22}+\lambda_{23}+2\lambda_{32}+\lambda_{33})}\, \hbar\, t_1 \gamma_{32} + e^{\gamma \hbar t_1 (2\lambda_{12}+\lambda_{13}+2\lambda_{22}+\lambda_{23}+2\lambda_{32}+\lambda_{33})}\, \hbar^2 t_1^2 \gamma_{21} \gamma_{32}\Big);
\end{aligned}
$$

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Simplify[tt1 == tt2]
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True

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Simplify[tt1]
```

$$\Big(e^{-\gamma\hbar t_1(12\lambda_{11}+6\lambda_{12}+\lambda_{13}+12\lambda_{21}+6\lambda_{22}+\lambda_{23}+12\lambda_{31}+6\lambda_{32}+\lambda_{33})}\hbar x_1 y_1$$
$$\Big(e^{\gamma\hbar t_1(12\lambda_{11}+7\lambda_{12}+\lambda_{13}+12\lambda_{21}+7\lambda_{22}+\lambda_{23}+12\lambda_{31}+7\lambda_{32}+\lambda_{33})}\gamma_{13}+e^{\gamma\hbar t_1(11\lambda_{11}+6\lambda_{12}+11\lambda_{21}+6\lambda_{22}+11\lambda_{31}+6\lambda_{32})}\gamma_{21}+$$
$$e^{\gamma\hbar t_1(12\lambda_{11}+7\lambda_{12}+\lambda_{13}+12\lambda_{21}+7\lambda_{22}+\lambda_{23}+12\lambda_{31}+7\lambda_{32}+\lambda_{33})}\hbar t_1\gamma_{13}\gamma_{21}+$$
$$e^{\gamma\hbar t_1(11\lambda_{11}+7\lambda_{12}+11\lambda_{21}+7\lambda_{22}+11\lambda_{31}+7\lambda_{32})}\gamma_{22}+e^{\gamma\hbar t_1(11\lambda_{11}+7\lambda_{12}+\lambda_{13}+11\lambda_{21}+7\lambda_{22}+\lambda_{23}+11\lambda_{31}+7\lambda_{32}+\lambda_{33})}\gamma_{23}+$$
$$e^{\gamma\hbar t_1(11\lambda_{11}+5\lambda_{12}+11\lambda_{21}+5\lambda_{22}+11\lambda_{31}+5\lambda_{32})}\gamma_{31}+e^{\gamma\hbar t_1(12\lambda_{11}+6\lambda_{12}+\lambda_{13}+12\lambda_{21}+6\lambda_{22}+\lambda_{23}+12\lambda_{31}+6\lambda_{32}+\lambda_{33})}$$
$$\hbar t_1\gamma_{13}\gamma_{31}-e^{\gamma\hbar t_1(11\lambda_{11}+6\lambda_{12}+11\lambda_{21}+6\lambda_{22}+11\lambda_{31}+6\lambda_{32})}\hbar t_1\gamma_{22}\gamma_{31}-$$
$$e^{\gamma\hbar t_1(12\lambda_{11}+7\lambda_{12}+\lambda_{13}+12\lambda_{21}+7\lambda_{22}+\lambda_{23}+12\lambda_{31}+7\lambda_{32}+\lambda_{33})}\hbar^2 t_1^2\gamma_{13}\gamma_{22}\gamma_{31}+e^{\gamma\hbar t_1(11\lambda_{11}+6\lambda_{12}+11\lambda_{21}+6\lambda_{22}+11\lambda_{31}+6\lambda_{32})}$$
$$\gamma_{32}+e^{\gamma\hbar t_1(12\lambda_{11}+7\lambda_{12}+\lambda_{13}+12\lambda_{21}+7\lambda_{22}+\lambda_{23}+12\lambda_{31}+7\lambda_{32}+\lambda_{33})}\hbar t_1\gamma_{13}\gamma_{32}+$$
$$e^{\gamma\hbar t_1(11\lambda_{11}+6\lambda_{12}+11\lambda_{21}+6\lambda_{22}+11\lambda_{31}+6\lambda_{32})}\hbar t_1\gamma_{21}\gamma_{32}+e^{\gamma\hbar t_1(12\lambda_{11}+7\lambda_{12}+\lambda_{13}+12\lambda_{21}+7\lambda_{22}+\lambda_{23}+12\lambda_{31}+7\lambda_{32}+\lambda_{33})}$$
$$\hbar^2 t_1^2\gamma_{13}\gamma_{21}\gamma_{32}+e^{\gamma\hbar t_1(11\lambda_{11}+7\lambda_{12}+\lambda_{13}+11\lambda_{21}+7\lambda_{22}+\lambda_{23}+11\lambda_{31}+7\lambda_{32}+\lambda_{33})}\hbar t_1\gamma_{23}\gamma_{32}+$$
$$e^{\gamma\hbar t_1(11\lambda_{11}+6\lambda_{12}+\lambda_{13}+11\lambda_{21}+6\lambda_{22}+\lambda_{23}+11\lambda_{31}+6\lambda_{32}+\lambda_{33})}\gamma_{33}-$$
$$e^{\gamma\hbar t_1(11\lambda_{11}+7\lambda_{12}+\lambda_{13}+11\lambda_{21}+7\lambda_{22}+\lambda_{23}+11\lambda_{31}+7\lambda_{32}+\lambda_{33})}\hbar t_1\gamma_{22}\gamma_{33}+e^{\gamma\hbar t_1(12\lambda_{11}+7\lambda_{12}+12\lambda_{21}+7\lambda_{22}+12\lambda_{31}+7\lambda_{32})}$$
$$\gamma_{12}\left(1+\hbar t_1\left(\gamma_{21}-e^{\gamma\hbar t_1(\lambda_{13}+\lambda_{23}+\lambda_{33})}\gamma_{33}\right)+e^{\gamma\hbar t_1(\lambda_{13}+\lambda_{23}+\lambda_{33})}\hbar^2 t_1^2(\gamma_{23}\gamma_{31}-\gamma_{21}\gamma_{33})\right)+$$
$$\gamma_{11}\Big(e^{6\gamma\hbar t_1(2\lambda_{11}+\lambda_{12}+2\lambda_{21}+\lambda_{22}+2\lambda_{31}+\lambda_{32})}-\hbar t_1$$
$$\left(e^{\gamma\hbar t_1(12\lambda_{11}+7\lambda_{12}+12\lambda_{21}+7\lambda_{22}+12\lambda_{31}+7\lambda_{32})}\gamma_{22}+e^{\gamma\hbar t_1(12\lambda_{11}+7\lambda_{12}+\lambda_{13}+12\lambda_{21}+7\lambda_{22}+\lambda_{23}+12\lambda_{31}+7\lambda_{32}+\lambda_{33})}\gamma_{23}+\right.$$
$$\left.e^{\gamma\hbar t_1(12\lambda_{11}+6\lambda_{12}+\lambda_{13}+12\lambda_{21}+6\lambda_{22}+\lambda_{23}+12\lambda_{31}+6\lambda_{32}+\lambda_{33})}\gamma_{33}\right)-$$
$$e^{\gamma\hbar t_1(12\lambda_{11}+7\lambda_{12}+\lambda_{13}+12\lambda_{21}+7\lambda_{22}+\lambda_{23}+12\lambda_{31}+7\lambda_{32}+\lambda_{33})}\hbar^2 t_1^2(\gamma_{23}\gamma_{32}-\gamma_{22}\gamma_{33})\Big)\Big)\Big)\Big/$$
$$\left(e^{\gamma\hbar t_1(\lambda_{12}+\lambda_{22}+\lambda_{32})}+\hbar t_1\left(e^{\gamma\hbar t_1(\lambda_{12}+\lambda_{22}+\lambda_{32})}\gamma_{21}+\gamma_{31}+e^{\gamma\hbar t_1(\lambda_{12}+\lambda_{22}+\lambda_{32})}\gamma_{32}\right)-\right.$$
$$\left.e^{\gamma\hbar t_1(\lambda_{12}+\lambda_{22}+\lambda_{32})}\hbar^2 t_1^2(\gamma_{22}\gamma_{31}-\gamma_{21}\gamma_{32})\right)+$$
$$\hbar a_1 t_1(\lambda_{11}+\lambda_{12}+\lambda_{13}+\lambda_{21}+\lambda_{22}+\lambda_{23}+\lambda_{31}+\lambda_{32}+\lambda_{33})$$

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Numerator[tt1]
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$$e^{6\gamma\hbar t_1(2\lambda_{11}+\lambda_{12}+2\lambda_{21}+\lambda_{22}+2\lambda_{31}+\lambda_{32})}\hbar x_1 y_1\gamma_{11}+e^{\gamma\hbar t_1(12\lambda_{11}+7\lambda_{12}+12\lambda_{21}+7\lambda_{22}+12\lambda_{31}+7\lambda_{32})}\hbar x_1 y_1\gamma_{12}+$$
$$e^{\gamma\hbar t_1(12\lambda_{11}+7\lambda_{12}+\lambda_{13}+12\lambda_{21}+7\lambda_{22}+\lambda_{23}+12\lambda_{31}+7\lambda_{32}+\lambda_{33})}\hbar x_1 y_1\gamma_{13}+$$
$$e^{\gamma\hbar t_1(11\lambda_{11}+6\lambda_{12}+11\lambda_{21}+6\lambda_{22}+11\lambda_{31}+6\lambda_{32})}\hbar x_1 y_1\gamma_{21}+e^{\gamma\hbar t_1(12\lambda_{11}+7\lambda_{12}+12\lambda_{21}+7\lambda_{22}+12\lambda_{31}+7\lambda_{32})}\hbar^2 t_1 x_1 y_1\gamma_{12}\gamma_{21}+$$
$$e^{\gamma\hbar t_1(12\lambda_{11}+7\lambda_{12}+\lambda_{13}+12\lambda_{21}+7\lambda_{22}+\lambda_{23}+12\lambda_{31}+7\lambda_{32}+\lambda_{33})}\hbar^2 t_1 x_1 y_1\gamma_{13}\gamma_{21}+$$
$$e^{\gamma\hbar t_1(11\lambda_{11}+7\lambda_{12}+11\lambda_{21}+7\lambda_{22}+11\lambda_{31}+7\lambda_{32})}\hbar x_1 y_1\gamma_{22}-e^{\gamma\hbar t_1(12\lambda_{11}+7\lambda_{12}+12\lambda_{21}+7\lambda_{22}+12\lambda_{31}+7\lambda_{32})}\hbar^2 t_1 x_1 y_1\gamma_{11}\gamma_{22}+$$
$$e^{\gamma\hbar t_1(11\lambda_{11}+7\lambda_{12}+\lambda_{13}+11\lambda_{21}+7\lambda_{22}+\lambda_{23}+11\lambda_{31}+7\lambda_{32}+\lambda_{33})}\hbar x_1 y_1\gamma_{23}-$$
$$e^{\gamma\hbar t_1(12\lambda_{11}+7\lambda_{12}+\lambda_{13}+12\lambda_{21}+7\lambda_{22}+\lambda_{23}+12\lambda_{31}+7\lambda_{32}+\lambda_{33})}\hbar^2 t_1 x_1 y_1\gamma_{11}\gamma_{23}+$$
$$e^{\gamma\hbar t_1(11\lambda_{11}+5\lambda_{12}+11\lambda_{21}+5\lambda_{22}+11\lambda_{31}+5\lambda_{32})}\hbar x_1 y_1\gamma_{31}+$$
$$e^{\gamma\hbar t_1(12\lambda_{11}+6\lambda_{12}+\lambda_{13}+12\lambda_{21}+6\lambda_{22}+\lambda_{23}+12\lambda_{31}+6\lambda_{32}+\lambda_{33})}\hbar^2 t_1 x_1 y_1\gamma_{13}\gamma_{31}-$$
$$e^{\gamma\hbar t_1(11\lambda_{11}+6\lambda_{12}+11\lambda_{21}+6\lambda_{22}+11\lambda_{31}+6\lambda_{32})}\hbar^2 t_1 x_1 y_1\gamma_{22}\gamma_{31}-$$
$$e^{\gamma\hbar t_1(12\lambda_{11}+7\lambda_{12}+\lambda_{13}+12\lambda_{21}+7\lambda_{22}+\lambda_{23}+12\lambda_{31}+7\lambda_{32}+\lambda_{33})}\hbar^3 t_1^2 x_1 y_1\gamma_{13}\gamma_{22}\gamma_{31}+$$
$$e^{\gamma\hbar t_1(12\lambda_{11}+7\lambda_{12}+\lambda_{13}+12\lambda_{21}+7\lambda_{22}+\lambda_{23}+12\lambda_{31}+7\lambda_{32}+\lambda_{33})}\hbar^3 t_1^2 x_1 y_1\gamma_{12}\gamma_{23}\gamma_{31}+$$
$$e^{\gamma\hbar t_1(11\lambda_{11}+6\lambda_{12}+11\lambda_{21}+6\lambda_{22}+11\lambda_{31}+6\lambda_{32})}\hbar x_1 y_1\gamma_{32}+$$
$$e^{\gamma\hbar t_1(12\lambda_{11}+7\lambda_{12}+\lambda_{13}+12\lambda_{21}+7\lambda_{22}+\lambda_{23}+12\lambda_{31}+7\lambda_{32}+\lambda_{33})}\hbar^2 t_1 x_1 y_1\gamma_{13}\gamma_{32}+$$
$$e^{\gamma\hbar t_1(11\lambda_{11}+6\lambda_{12}+11\lambda_{21}+6\lambda_{22}+11\lambda_{31}+6\lambda_{32})}\hbar^2 t_1 x_1 y_1\gamma_{21}\gamma_{32}+$$
$$e^{\gamma\hbar t_1(12\lambda_{11}+7\lambda_{12}+\lambda_{13}+12\lambda_{21}+7\lambda_{22}+\lambda_{23}+12\lambda_{31}+7\lambda_{32}+\lambda_{33})}\hbar^3 t_1^2 x_1 y_1\gamma_{13}\gamma_{21}\gamma_{32}+$$
$$e^{\gamma\hbar t_1(11\lambda_{11}+7\lambda_{12}+\lambda_{13}+11\lambda_{21}+7\lambda_{22}+\lambda_{23}+11\lambda_{31}+7\lambda_{32}+\lambda_{33})}\hbar^2 t_1 x_1 y_1\gamma_{23}\gamma_{32}-$$
$$e^{\gamma\hbar t_1(12\lambda_{11}+7\lambda_{12}+\lambda_{13}+12\lambda_{21}+7\lambda_{22}+\lambda_{23}+12\lambda_{31}+7\lambda_{32}+\lambda_{33})}\hbar^3 t_1^2 x_1 y_1\gamma_{11}\gamma_{23}\gamma_{32}+$$
$$e^{\gamma\hbar t_1(11\lambda_{11}+6\lambda_{12}+\lambda_{13}+11\lambda_{21}+6\lambda_{22}+\lambda_{23}+11\lambda_{31}+6\lambda_{32}+\lambda_{33})}\hbar x_1 y_1\gamma_{33}-$$
$$e^{\gamma\hbar t_1(12\lambda_{11}+6\lambda_{12}+\lambda_{13}+12\lambda_{21}+6\lambda_{22}+\lambda_{23}+12\lambda_{31}+6\lambda_{32}+\lambda_{33})}\hbar^2 t_1 x_1 y_1\gamma_{11}\gamma_{33}-$$
$$e^{\gamma\hbar t_1(12\lambda_{11}+7\lambda_{12}+\lambda_{13}+12\lambda_{21}+7\lambda_{22}+\lambda_{23}+12\lambda_{31}+7\lambda_{32}+\lambda_{33})}\hbar^2 t_1 x_1 y_1\gamma_{12}\gamma_{33}-$$
$$e^{\gamma\hbar t_1(12\lambda_{11}+7\lambda_{12}+\lambda_{13}+12\lambda_{21}+7\lambda_{22}+\lambda_{23}+12\lambda_{31}+7\lambda_{32}+\lambda_{33})}\hbar^3 t_1^2 x_1 y_1\gamma_{12}\gamma_{21}\gamma_{33}-$$
$$e^{\gamma\hbar t_1(11\lambda_{11}+7\lambda_{12}+\lambda_{13}+11\lambda_{21}+7\lambda_{22}+\lambda_{23}+11\lambda_{31}+7\lambda_{32}+\lambda_{33})}\hbar^2 t_1 x_1 y_1\gamma_{22}\gamma_{33}+$$
$$e^{\gamma\hbar t_1(12\lambda_{11}+7\lambda_{12}+\lambda_{13}+12\lambda_{21}+7\lambda_{22}+\lambda_{23}+12\lambda_{31}+7\lambda_{32}+\lambda_{33})}\hbar^3 t_1^2 x_1 y_1\gamma_{11}\gamma_{22}\gamma_{33}+$$
$$e^{\gamma\hbar t_1(12\lambda_{11}+7\lambda_{12}+\lambda_{13}+12\lambda_{21}+7\lambda_{22}+\lambda_{23}+12\lambda_{31}+7\lambda_{32}+\lambda_{33})}\hbar a_1 t_1\lambda_{11}+$$
$$e^{\gamma\hbar t_1(12\lambda_{11}+7\lambda_{12}+\lambda_{13}+12\lambda_{21}+7\lambda_{22}+\lambda_{23}+12\lambda_{31}+7\lambda_{32}+\lambda_{33})}\hbar^2 a_1 t_1^2\gamma_{21}\lambda_{11}+$$

$$e^{\gamma \hbar t_1 (12 \lambda_{11}+6 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+6 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+6 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{31} \lambda_{11} -$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{22} \gamma_{31} \lambda_{11} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{32} \lambda_{11} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{21} \gamma_{32} \lambda_{11} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar a_1 t_1 \lambda_{12} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{21} \lambda_{12} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+6 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+6 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+6 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{31} \lambda_{12} -$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{22} \gamma_{31} \lambda_{12} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{32} \lambda_{12} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{21} \gamma_{32} \lambda_{12} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar a_1 t_1 \lambda_{13} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{21} \lambda_{13} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+6 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+6 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+6 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{31} \lambda_{13} -$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{22} \gamma_{31} \lambda_{13} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{32} \lambda_{13} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{21} \gamma_{32} \lambda_{13} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar a_1 t_1 \lambda_{21} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{21} \lambda_{21} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+6 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+6 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+6 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{31} \lambda_{21} -$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{22} \gamma_{31} \lambda_{21} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{32} \lambda_{21} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{21} \gamma_{32} \lambda_{21} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar a_1 t_1 \lambda_{22} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{21} \lambda_{22} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+6 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+6 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+6 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{31} \lambda_{22} -$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{22} \gamma_{31} \lambda_{22} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{32} \lambda_{22} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{21} \gamma_{32} \lambda_{22} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar a_1 t_1 \lambda_{23} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{21} \lambda_{23} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+6 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+6 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+6 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{31} \lambda_{23} -$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{22} \gamma_{31} \lambda_{23} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{32} \lambda_{23} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{21} \gamma_{32} \lambda_{23} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar a_1 t_1 \lambda_{31} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{21} \lambda_{31} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+6 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+6 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+6 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{31} \lambda_{31} -$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{22} \gamma_{31} \lambda_{31} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{32} \lambda_{31} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{21} \gamma_{32} \lambda_{31} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar a_1 t_1 \lambda_{32} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{21} \lambda_{32} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+6 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+6 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+6 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{31} \lambda_{32} -$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{22} \gamma_{31} \lambda_{32} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{32} \lambda_{32} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{21} \gamma_{32} \lambda_{32} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar a_1 t_1 \lambda_{33} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{21} \lambda_{33} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+6 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+6 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+6 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{31} \lambda_{33} -$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{22} \gamma_{31} \lambda_{33} +$$

$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^2 a_1 t_1^2 \gamma_{32} \lambda_{33} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^3 a_1 t_1^3 \gamma_{21} \gamma_{32} \lambda_{33}$$

```
Simplify[tt1 /. x1 → 0]
```

$$\hbar a_1 t_1 (\lambda_{11} + \lambda_{12} + \lambda_{13} + \lambda_{21} + \lambda_{22} + \lambda_{23} + \lambda_{31} + \lambda_{32} + \lambda_{33})$$

```
Simplify[tt1 /. a1 → 0]
```

$$\Big(e^{-\gamma \hbar t_1 (12 \lambda_{11}+6 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+6 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+6 \lambda_{32}+\lambda_{33})} \hbar x_1 y_1$$
$$\Big(e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \gamma_{13} + e^{\gamma \hbar t_1 (11 \lambda_{11}+6 \lambda_{12}+11 \lambda_{21}+6 \lambda_{22}+11 \lambda_{31}+6 \lambda_{32})} \gamma_{21} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar t_1 \gamma_{13} \gamma_{21} + e^{\gamma \hbar t_1 (11 \lambda_{11}+7 \lambda_{12}+11 \lambda_{21}+7 \lambda_{22}+11 \lambda_{31}+7 \lambda_{32})} \gamma_{22} +$$
$$e^{\gamma \hbar t_1 (11 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+11 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+11 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \gamma_{23} + e^{\gamma \hbar t_1 (11 \lambda_{11}+5 \lambda_{12}+11 \lambda_{21}+5 \lambda_{22}+11 \lambda_{31}+5 \lambda_{32})} \gamma_{31} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+6 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+6 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+6 \lambda_{32}+\lambda_{33})} \hbar t_1 \gamma_{13} \gamma_{31} - e^{\gamma \hbar t_1 (11 \lambda_{11}+6 \lambda_{12}+11 \lambda_{21}+6 \lambda_{22}+11 \lambda_{31}+6 \lambda_{32})}$$
$$\hbar t_1 \gamma_{22} \gamma_{31} - e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^2 t_1^2 \gamma_{13} \gamma_{22} \gamma_{31} +$$
$$e^{\gamma \hbar t_1 (11 \lambda_{11}+6 \lambda_{12}+11 \lambda_{21}+6 \lambda_{22}+11 \lambda_{31}+6 \lambda_{32})} \gamma_{32} + e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar t_1 \gamma_{13} \gamma_{32} +$$
$$e^{\gamma \hbar t_1 (11 \lambda_{11}+6 \lambda_{12}+11 \lambda_{21}+6 \lambda_{22}+11 \lambda_{31}+6 \lambda_{32})} \hbar t_1 \gamma_{21} \gamma_{32} + e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})}$$
$$\hbar^2 t_1^2 \gamma_{13} \gamma_{21} \gamma_{32} + e^{\gamma \hbar t_1 (11 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+11 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+11 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar t_1 \gamma_{23} \gamma_{32} +$$
$$e^{\gamma \hbar t_1 (11 \lambda_{11}+6 \lambda_{12}+\lambda_{13}+11 \lambda_{21}+6 \lambda_{22}+\lambda_{23}+11 \lambda_{31}+6 \lambda_{32}+\lambda_{33})} \gamma_{33} -$$
$$e^{\gamma \hbar t_1 (11 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+11 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+11 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar t_1 \gamma_{22} \gamma_{33} + e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+12 \lambda_{21}+7 \lambda_{22}+12 \lambda_{31}+7 \lambda_{32})}$$
$$\gamma_{12} \Big(1 + \hbar t_1 \Big(\gamma_{21} - e^{\gamma \hbar t_1 (\lambda_{13}+\lambda_{23}+\lambda_{33})} \gamma_{33}\Big) + e^{\gamma \hbar t_1 (\lambda_{13}+\lambda_{23}+\lambda_{33})} \hbar^2 t_1^2 (\gamma_{23} \gamma_{31} - \gamma_{21} \gamma_{33})\Big) +$$
$$\gamma_{11} \Big(e^{6 \gamma \hbar t_1 (2 \lambda_{11}+\lambda_{12}+2 \lambda_{21}+\lambda_{22}+2 \lambda_{31}+\lambda_{32})} - \hbar t_1$$
$$\Big(e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+12 \lambda_{21}+7 \lambda_{22}+12 \lambda_{31}+7 \lambda_{32})} \gamma_{22} + e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \gamma_{23} +$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+6 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+6 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+6 \lambda_{32}+\lambda_{33})} \gamma_{33}\Big) -$$
$$e^{\gamma \hbar t_1 (12 \lambda_{11}+7 \lambda_{12}+\lambda_{13}+12 \lambda_{21}+7 \lambda_{22}+\lambda_{23}+12 \lambda_{31}+7 \lambda_{32}+\lambda_{33})} \hbar^2 t_1^2 (\gamma_{23} \gamma_{32} - \gamma_{22} \gamma_{33})\Big)\Big)\Big) \Big/$$
$$\Big(e^{\gamma \hbar t_1 (\lambda_{12}+\lambda_{22}+\lambda_{32})} + \hbar t_1 \Big(e^{\gamma \hbar t_1 (\lambda_{12}+\lambda_{22}+\lambda_{32})} \gamma_{21} + \gamma_{31} + e^{\gamma \hbar t_1 (\lambda_{12}+\lambda_{22}+\lambda_{32})} \gamma_{32}\Big) -$$
$$e^{\gamma \hbar t_1 (\lambda_{12}+\lambda_{22}+\lambda_{32})} \hbar^2 t_1^2 (\gamma_{22} \gamma_{31} - \gamma_{21} \gamma_{32})\Big)$$