Appendix

$$E_1 = a_{19}(a_4a_{11} - a_5a_{10})$$

$$E_2 = g_9(a_4a_{11} - a_5a_{10}) + a_{19}(g_8a_4 - g_6a_5 - a_1a_5a_{12} + a_1a_6a_{11} + a_2a_4a_{12} - a_2a_6a_{10} + g_1a_4a_{11} - g_1a_5a_{10} + g_5a_{11} - g_7a_{10}) + a_3a_{21}(a_4a_{11} - a_5a_{10})$$

$$E_3 = a_{12}a_{19}(g_5a_2 - g_7a_1) + a_1a_{21}(a_9a_{11} - a_5a_{15}) + a_2a_{21}(a_4a_{15} - a_9a_{10}) + (a_3a_{12} - a_{15})(a_4a_{23} - a_5a_{22}) + (a_3a_6 - a_9)(a_{11}a_{22} - a_{10}a_{23}) + g_2a_{16}(a_2a_{10} - a_1a_{11}) + g_9(g_8a_4 - g_6a_5 + g_5a_{11} - g_7a_{10}) + a_{19}(g_5g_8 - g_6g_7) + g_9a_2(a_4a_{12} - a_6a_{10}) + g_9a_1(a_6a_{11} - a_5a_{12}) + (g_4a_3 + g_1g_9)(a_4a_{11} - a_5a_{10}) + a_6a_{19}(g_8a_1 - g_6a_2) + (g_1a_{19} + a_3a_{21})(g_8a_4 - g_6a_5 + g_5a_{11} - g_7a_{10}) + g_3a_{19}(a_1a_5 - a_2a_4)$$

$$E_4 = a_{19}(g_1g_5g_8 - g_1g_7g_6 + g_6g_2a_2 - g_2g_8a_1 - g_5g_3a_2 + g_7g_3a_1) + a_{15}(g_7a_{21} - g_5a_{23}) + g_3g_9(a_1a_5 - a_2a_4) + (g_4a_3 + g_1g_9)(g_8a_4 + g_5a_{11} - g_7a_{10} - g_6a_5) + a_9(g_6a_{23} - g_4a_{22}) + g_9(g_5g_8 - g_7g_6) + g_9a_6(g_8a_1 - g_6a_2) + g_2g_9(a_2a_{10} - a_1a_{11}) + a_3a_{22}(g_5g_4 - g_7g_6) + a_3g_4(g_5a_{11} - g_7a_{10}) + a_{12}g_9(g_5a_2 - g_7a_1) + a_3g_3(a_5a_{22} - a_4a_{23}) + a_9a_{21}(g_8a_1 - g_6a_2) + a_3a_6(g_8a_{21} - g_6a_{22}) + g_4a_1(a_9a_{11} - a_1a_{15}) + g_4a_2(a_4a_{15} - a_9a_{10}) + g_2a_3(a_{10}a_{23} - a_{11}a_{22}) + g_5a_2(a_{21}a_{15} - a_{12}a_{23}) + g_1a_{15}(a_5a_{22} - a_4a_{23}) + g_1a_9(a_{10}a_{23} - a_{11}a_{22}) + a_2a_{22}(a_6a_{15} - a_9a_{12}) + a_1a_{23}(a_9a_{12} - a_6a_{15})$$

$$E_5 = (g_3a_9 - g_2a_{15})(a_2a_{22} - a_1a_{23}) + (g_1g_9 + g_4a_3)(g_5g_8 - g_7g_6) + g_2g_9(g_6a_2 - g_8a_1) + g_3g_9(g_7a_1 - g_5a_2) + g_4a_9(g_8a_1 - g_6a_2) + (g_3a_3 + g_1a_{15})(g_7a_{22} - g_5a_{23}) + g_4a_{15}(g_5a_2 - g_7a_1) + (g_1a_9 + g_2a_3)(g_6a_{23} - g_8a_{22})$$

Here

$$a_{21} = i\xi c(a_{16}), a_{22} = i\xi c(a_{17}), a_{23} = i\xi c(a_{18}), g_1 = \xi^2(c^2 - 1), g_2 = a_6\xi^2,$$
$$g_3 = a_{12}\xi^2, g_4 = -a_{21}\xi^2, g_5 = \xi^2(c^2 - a_4) - a_7, g_6 = -a_{10}\xi^2 - a_{13},$$
$$g_7 = -a_5\xi^2 - a_8, g_8 = \xi^2(c^2 - a_{11}) - a_{14}, g_9 = -a_{19}\xi^2 + i\xi c$$

$$D_{0i} = \begin{vmatrix} a_4m_i^2 + g_5 & a_5m_i^2 + g_7 & a_9 \\ a_{10}m_i^2 + g_6 & a_{11}m_i^2 + g_8 & a_{15} \\ a_{22} & a_{23} & a_{19}m_i^2 + g_9 \end{vmatrix}, D_{1i} = \begin{vmatrix} -a_6m_i^2 + g_2 & a_5m_i^2 + g_7 & a_9 \\ -a_{12}m_i^2 + g_3 & a_{11}m_i^2 + g_8 & a_{15} \\ a_{21} & a_{23} & a_{19}m_i^2 + g_9 \end{vmatrix},$$

$$D_{2i} = \begin{vmatrix} -a_6m_i^2 + g_2 & a_4m_i^2 + g_5 & a_9 \\ -a_{12}m_i^2 + g_3 & a_{10}m_i^2 + g_6 & a_{15} \\ a_{21}m_i^2 + g_4 & a_{22} & a_{19}m_i^2 + g_9 \end{vmatrix}, D_{3i} = \begin{vmatrix} -a_6m_i^2 + g_2 & a_4m_i^2 + g_5 & a_5m_i^2 + g_7 \\ -a_{12}m_i^2 + g_3 & a_{10}m_i^2 + g_6 & a_{11}m_i^2 + g_8 \\ a_{21}m_i^2 + g_4 & a_{22} & a_{23} \end{vmatrix}$$

$$r_i = -\frac{D_{1i}}{D_{0i}}, s_i = \frac{D_{2i}}{D_{0i}}, -h_i = \frac{D_{3i}}{D_{0i}}$$