ONLINE ADDENDUM TO THE ARTICLE "CLASSIFICATION OF REGULAR PARAMETRIZED ONE-RELATION OPERADS"

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ABSTRACT. This addendum to [1] collates together the list of polynomial entries of the matrices that are used for the key computations in that paper; these polynomials are not particularly instructive for main proofs, and therefore are separated into an online addendum. We also append the `Magma` script used for an independent verification of our `Maple` computations; that script can be copy-pasted into the online calculator to reproduce the results.

COMPLETE LIST OF THE ENTRIES OF THE REDUCED REPRESENTATION MATRICES

We refer to [1] for notation. All the information in the original cubic relation matrix M is encapsulated in these five very small matrices $B(4),\dots,B(1^4)$ in extremely compressed form.

Entries of $B(4)$.

$$B(4)_{11} = -x_6x_4 - x_5x_4 - x_4^2 - x_6x_3 - x_5x_3 - 2x_4x_3 - x_3^2 - x_4x_2 - x_3x_2 - x_4x_1 - x_3x_1 + x_2 + x_1$$

$$B(4)_{12} = -x_6^3 - 2x_6^2x_5 - x_6x_5^2 - 2x_6^2x_4 - 2x_6x_5x_4 - x_6x_4^2 - 2x_6^2x_3 - 2x_6x_5x_3 - 2x_6x_4x_3 - x_6x_3^2 - 2x_6^2x_2 - 2x_6x_5x_2 - 2x_6x_4x_2 - 2x_6x_3x_2 - x_6x_2^2 - 3x_6^2x_1 - 4x_6x_5x_1 - x_5^2x_1 - 4x_6x_4x_1 - 2x_5x_4x_1 - x_4^2x_1 - 4x_6x_3x_1 - 2x_5x_3x_1 - 2x_4x_3x_1 - x_3^2x_1 - 4x_6x_2x_1 - 2x_5x_2x_1 - 2x_4x_2x_1 - 2x_3x_2x_1 - x_2^2x_1 - 3x_6x_1^2 - 2x_5x_1^2 - 2x_4x_1^2 - 2x_3x_1^2 - 2x_2x_1^2 - x_1^3 + x_6x_3 + x_5x_3 + x_4x_3 + x_3^2 - x_6x_2 - x_5x_2 - x_4x_2 - x_2^2 + x_3x_1 - x_2x_1 + x_6 + x_4$$

$$B(4)_{21} = -x_6 - x_5 + 1$$

$$B(4)_{22} = -x_6x_4 - x_5x_4 - x_4^2 - x_4x_3 - x_6x_2 - x_5x_2 - 2x_4x_2 - x_3x_2 - x_2^2 - x_4x_1 - x_2x_1 - x_3 - x_1$$

Entries of $B(31)$.

$$B(31)_{11} = -x_6^2x_4 + x_6x_5x_4 - x_6x_4^2 + x_5x_4^2 - x_6^2x_3 + x_6x_5x_3 + x_6x_3^2 - x_5x_3^2 + x_6x_4x_1 - x_5x_4x_1 + x_6x_3x_1 - x_5x_3x_1 - x_6x_4 - x_5x_4 + x_4x_2 + x_4x_1 + x_2$$

$$B(31)_{12} = x_6^2x_4 - x_6x_5x_4 + x_6x_4^2 - x_5x_4^2 + x_6^2x_3 - x_6x_5x_3 - x_6x_3^2 + x_5x_3^2 - x_6x_4x_1 + x_5x_4x_1 - x_6x_3x_1 + x_5x_3x_1 - x_6x_3 - x_5x_3 + x_3x_2 + x_3x_1 + x_1$$

$$B(31)_{13} = -x_6x_4^2x_3 - x_4^3x_3 - x_6x_4x_3^2 + x_4x_3^3 + x_6x_4x_3x_2 + x_4^2x_3x_2 + x_6x_3^2x_2 - x_3^3x_2 - x_6x_4^2x_1 - x_4^3x_1 - x_6x_4x_3x_1 + x_4^2x_3x_1 + 2x_4x_3^2x_1 + x_6x_4x_2x_1 + x_4^2x_2x_1 + x_6x_3x_2x_1 - x_4x_3x_2x_1 - 2x_3^2x_2x_1 + x_4^2x_1^2 + x_4x_3x_1^2 - x_4x_2x_1^2 - x_3x_2x_1^2 + 2x_6^2x_5 - x_6^2x_4 + 2x_6x_5x_4 - x_6x_4^2 - 2x_6x_5x_3 + x_6x_4x_3 - x_6^2x_1 - x_6x_4x_1 + 2x_5x_4x_1 - x_4^2x_1 + 2x_6x_3x_1 - x_5x_3x_1 + x_4x_3x_1 - x_3x_2x_1 + x_6x_1^2 - x_5x_1^2 - x_2x_1^2 - x_6x_3 - x_4x_3 + x_6x_2 + x_4x_2 - x_3x_2 - x_2x_1$$

$$B(31)_{14} = -x_6x_4^3 - x_4^4 - x_6x_4^2x_3 + x_4^2x_3^2 + x_6x_4x_2^2 + x_4^2x_2^2 + x_6x_3x_2^2 - x_3^2x_2^2 + x_4^3x_1 + x_4^2x_3x_1 - x_4x_2^2x_1 - x_3x_2^2x_1 + x_6^3 + x_6x_5^2 - 2x_6x_5x_4 - x_6^2x_3 + 2x_6x_5x_3 - x_6x_4x_3 + x_6x_3^2 - x_6^2x_2 - 2x_6x_5x_2 + x_6x_4x_2 - x_6x_3x_2 + x_6x_2^2 + x_6^2x_1 + x_5^2x_1 + 3x_6x_4x_1 - x_5x_4x_1 - 2x_6x_3x_1 + 2x_5x_3x_1 - x_4x_3x_1 + x_3^2x_1 + x_6x_2x_1 - x_5x_2x_1 - x_3x_2x_1 - x_6x_1^2 + x_4x_1^2 - x_3x_1^2 - x_1^3 - x_5x_3 - x_3^2 + x_5x_2 - x_4x_2 + x_3x_2 - x_2^2 - x_6 - x_4$$

$$B(31)_{15} = -x_6^2x_4^2 - x_6x_5x_4^2 - x_6x_4^3 - x_5x_4^3 - x_6^2x_4x_3 - x_6x_5x_4x_3 + x_6x_4x_3^2 + x_5x_4x_3^2 + x_6^2x_4x_2 + x_6x_5x_4x_2 + x_6x_4^2x_2 + x_5x_4^2x_2 + x_6^2x_3x_2 + x_6x_5x_3x_2 - x_6x_3^2x_2 - x_5x_3^2x_2 + x_6x_4^2x_1 + x_5x_4^2x_1 + x_6x_4x_3x_1 + x_5x_4x_3x_1 - x_6x_4x_2x_1 - x_5x_4x_2x_1 - x_6x_3x_2x_1 - x_5x_3x_2x_1 - x_6^3 - 2x_6^2x_5 - x_6x_5^2 + x_6^2x_4 + x_6x_4^2 + x_6^2x_3 - x_6x_4x_3 - x_4^2x_3 - 2x_6x_3^2 + x_3^3 + x_6^2x_2 + 2x_6x_5x_2 - x_6x_4x_2 + x_6x_3x_2 - x_6x_2^2 + x_6^2x_1 + 2x_6x_5x_1 + 2x_4^2x_1 + 2x_6x_3x_1 + x_4x_3x_1 - x_3^2x_1 - x_6x_2x_1 + x_5x_2x_1 - x_4x_2x_1 + x_3x_2x_1 - x_2^2x_1 + x_5x_1^2 - 3x_4x_1^2 - x_3x_1^2 - x_2x_1^2 - x_3x_2 - x_3x_1 + x_6$$

$$B(31)_{21} = -x_6^2x_4 + 2x_6x_5x_4 - x_5^2x_4 - x_6x_4^2 + x_5x_4^2 - x_6^2x_3 + 2x_6x_5x_3 - x_5^2x_3 - x_6x_4x_3 + x_5x_4x_3 + x_6x_4x_2 - x_5x_4x_2 + x_6x_3x_2 - x_5x_3x_2 - x_4^2 - x_4x_3 - x_6x_2 + x_5x_2 + x_4x_2 - x_6x_1 + x_5x_1 + x_4x_1$$

$$B(31)_{22} = x_6^2x_4 - 2x_6x_5x_4 + x_5^2x_4 + x_6x_4^2 - x_5x_4^2 + x_6^2x_3 - 2x_6x_5x_3 + x_5^2x_3 + x_6x_4x_3 - x_5x_4x_3 - x_6x_4x_2 + x_5x_4x_2 - x_6x_3x_2 + x_5x_3x_2 - x_4x_3 - x_3^2 + x_6x_2 - x_5x_2 + x_3x_2 + x_6x_1 - x_5x_1 + x_3x_1$$

$B(31)_{23} = -x_6x_4^2x_3 + x_5x_4^2x_3 - x_4^3x_3 - x_6x_4x_3^2 + x_5x_4x_3^2 - x_4^2x_3^2 + x_6x_4x_3x_2 - x_5x_4x_3x_2 + 2x_4^2x_3x_2 + x_6x_3^2x_2 - x_5x_3^2x_2 + 2x_4x_3^2x_2 - x_4x_3x_2^2 - x_3^2x_2^2 - x_6x_4^2x_1 + x_5x_4^2x_1 - x_4^3x_1 - x_6x_4x_3x_1 + x_5x_4x_3x_1 - x_4^2x_3x_1 + x_6x_4x_2x_1 - x_5x_4x_2x_1 + 2x_4^2x_2x_1 + x_6x_3x_2x_1 - x_5x_3x_2x_1 + 2x_4x_3x_2x_1 - x_4x_2^2x_1 - x_3x_2^2x_1 - x_6^3 + 2x_6^2x_5 - x_6x_5^2 - x_6^2x_4 + 2x_6x_5x_4 + x_6^2x_3 - x_6x_3^2 + x_6^2x_2 - 2x_6x_5x_2 + x_6x_4x_2 + x_6x_3x_2 - x_4x_3x_2 - x_6x_2^2 + x_3x_2^2 - 2x_6^2x_1 + 2x_6x_5x_1 - x_5^2x_1 - 3x_6x_4x_1 + 2x_5x_4x_1 + x_6x_3x_1 + 2x_6x_2x_1 - 2x_5x_2x_1 + x_3x_2x_1 - 2x_4x_1^2 + x_2x_1^2 - x_6x_3 + x_5x_3 - x_4x_3 + x_6x_2 - x_5x_2 + x_4x_2 + x_3x_2 - x_2^2 + x_6 + x_4$

$B(31)_{24} = -x_6x_4^3 + x_5x_4^3 - x_4^4 - x_6x_4^2x_3 + x_5x_4^2x_3 - x_4^3x_3 + x_4^3x_2 + x_4^2x_3x_2 + x_6x_4x_2^2 - x_5x_4x_2^2 + x_4^2x_2^2 + x_6x_3x_2^2 - x_5x_3x_2^2 + x_4x_3x_2^2 - x_4x_2^3 - x_3x_2^3 + x_6^3 - 2x_6^2x_5 + x_6x_5^2 + x_6^2x_4 - x_6x_4^2 - x_6^2x_3 + 2x_6x_5x_3 - x_6x_4x_3 + x_6x_3^2 - x_6^2x_2 - x_4^2x_2 - x_6x_3x_2 + x_6x_2^2 + x_2^3 + 2x_6^2x_1 - 4x_6x_5x_1 + x_5^2x_1 + 3x_6x_4x_1 - x_4^2x_1 - 2x_6x_3x_1 + 2x_5x_3x_1 + x_3^2x_1 - x_6x_2x_1 + x_2^2x_1 + x_6x_1^2 - 2x_5x_1^2 + x_4x_1^2 - x_3x_1^2 - x_2x_1^2 + x_6x_3 - x_5x_3 - x_3^2 - x_6x_2 + x_5x_2 + x_3x_2 + x_3x_1 - x_2x_1 - x_6 - x_4$

$B(31)_{25} = -x_6^2x_4^2 + x_5^2x_4^2 - x_6x_4^3 - x_5x_4^3 - x_6^2x_4x_3 + x_5^2x_4x_3 - x_6x_4^2x_3 - x_5x_4^2x_3 + x_6^2x_4x_2 - x_5^2x_4x_2 + 2x_6x_4^2x_2 + 2x_5x_4^2x_2 + x_6^2x_3x_2 - x_5^2x_3x_2 + 2x_6x_4x_3x_2 + 2x_5x_4x_3x_2 - x_6x_4x_2^2 - x_5x_4x_2^2 - x_6x_3x_2^2 - x_5x_3x_2^2 - 2x_6x_5x_4 + x_6x_4^2 - 2x_6x_5x_3 + x_5x_4x_3 - x_4^2x_3 - x_6x_3^2 + x_5x_3^2 - x_4x_3^2 + 2x_6x_5x_2 - 2x_6x_4x_2 - x_5x_4x_2 + x_4x_3x_2 + x_3^2x_2 + x_6x_2^2 + x_5x_2^2 + 2x_6x_5x_1 + x_6x_4x_1 - 3x_5x_4x_1 + 2x_4^2x_1 + 3x_6x_3x_1 - 2x_5x_3x_1 + 2x_4x_3x_1 - x_6x_2x_1 + 2x_5x_2x_1 - 2x_4x_2x_1 - x_3x_2x_1 - 2x_6x_1^2 + x_5x_1^2 + x_3x_1^2 - x_2x_1^2 - x_1^3 + x_4x_3 + x_3^2 - 2x_3x_2 - 2x_3x_1 + x_2x_1 + x_1^2$

$B(31)_{31} = -x_6^2x_4 + x_6x_5x_4 - x_6x_4^2 + x_5x_4^2 - x_6^2x_3 + x_6x_5x_3 - x_6x_4x_3 + x_5x_4x_3 - x_6x_3 - x_5x_3 - x_4x_3 - x_3^2 + x_4x_2 - x_3x_2 + x_4x_1 - x_3x_1 + x_1$

$B(31)_{32} = x_6^2x_4 - x_6x_5x_4 + x_6x_4^2 - x_5x_4^2 + x_6^2x_3 - x_6x_5x_3 + x_6x_4x_3 - x_5x_4x_3 - x_6x_4 - x_5x_4 - x_4^2 - x_4x_3 - x_4x_2 + x_3x_2 - x_4x_1 + x_3x_1 + x_2$

$B(31)_{33} = -x_6x_4^2x_3 - x_4^3x_3 - x_6x_4x_3^2 - x_4^2x_3^2 + x_6x_4x_3x_2 + x_4^2x_3x_2 + x_6x_3^2x_2 + x_4x_3^2x_2 - x_6x_4^2x_1 - x_4^3x_1 - x_6x_4x_3x_1 - x_4^2x_3x_1 + x_6x_4x_2x_1 + x_4^2x_2x_1 + x_6x_3x_2x_1 + x_4x_3x_2x_1 + 2x_6^2x_5 + 2x_6x_5x_4 + x_6^2x_3 + x_6x_4x_3 + x_6^2x_2 + x_6x_4x_2 + x_6x_3x_2 + 2x_6x_5x_1 + 2x_5x_4x_1 + x_6x_3x_1 - x_5x_3x_1 - x_3^2x_1 + 2x_6x_2x_1 + x_4x_2x_1 - x_3x_2x_1 - x_5x_1^2 - x_4x_1^2 - 2x_3x_1^2 - x_2x_1^2 - x_1^3 - x_6x_3 - x_4x_3 + x_3^2 + x_6x_2 + x_4x_2 + x_3x_1$

$B(31)_{34} = -x_6x_4^3 - x_4^4 - x_6x_4^2x_3 - x_4^3x_3 + x_6x_4x_2^2 + x_4^2x_2^2 + x_6x_3x_2^2 + x_4x_3x_2^2 + x_6^3 + x_6x_5^2 + x_6^2x_4 + 2x_6x_5x_3 + x_6x_3^2 + x_6x_4x_2 + x_6x_2^2 + 2x_6^2x_1 + x_5^2x_1 + 2x_6x_4x_1 - x_5x_4x_1 - x_4^2x_1 + 2x_5x_3x_1 - x_4x_3x_1 + x_3^2x_1 - x_5x_2x_1 - 2x_4x_2x_1 - x_3x_2x_1 - x_2^2x_1 + x_6x_1^2 - x_2x_1^2 - x_5x_3 + x_4x_3 - x_3^2 + x_5x_2 + 2x_3x_2 - x_6 - x_4$

$B(31)_{35} = -x_6^2x_4^2 - x_6x_5x_4^2 - x_6x_4^3 - x_5x_4^3 - x_6^2x_4x_3 - x_6x_5x_4x_3 - x_6x_4^2x_3 - x_5x_4^2x_3 + x_6^2x_4x_2 + x_6x_5x_4x_2 + x_6x_4^2x_2 + x_5x_4^2x_2 + x_6^2x_3x_2 + x_6x_5x_3x_2 + x_6x_4x_3x_2 + x_5x_4x_3x_2 + x_6^2x_4 + x_6x_4^2 + x_6^2x_3 - x_4^2x_3 - x_6x_3^2 - x_4x_3^2 + x_6^2x_2 + 2x_6x_5x_2 + x_6x_3x_2 - x_5^2x_1 + x_6x_4x_1 - x_5x_4x_1 + 2x_4^2x_1 + 2x_6x_3x_1 - x_5x_3x_1 + 2x_4x_3x_1 - x_6x_2x_1 + x_3x_2x_1 - x_6x_1^2 + x_3x_1^2 + x_6x_3 + x_5x_3 - x_6x_2 - x_5x_2 - x_4x_2 - 2x_3x_2 - x_2^2 - x_3x_1 - x_2x_1 + x_4$

$B(31)_{41} = x_6$

$B(31)_{42} = x_5 + 1$

$B(31)_{43} = -x_6x_4 - x_4^2 + x_4x_3 - x_6x_2 - x_4x_2 + x_4x_1$

$B(31)_{44} = -x_5x_4 + x_4^2 - x_4x_3 - x_5x_2 + x_4x_2 - x_3x_2 - x_3 - x_1$

$B(31)_{45} = x_6x_4 + x_5x_4 - x_4x_2 - x_2^2 - x_4x_1 - x_2x_1 + x_3$

$B(31)_{51} = x_6^2 - x_5^2 + x_6 + 1$

$B(31)_{52} = -x_6^2 + x_5^2 + x_5$

$B(31)_{53} = x_6x_4x_3 + x_5x_4x_3 - x_6x_3x_2 - x_5x_3x_2 + x_6x_4x_1 + x_5x_4x_1 - x_6x_2x_1 - x_5x_2x_1 - x_5x_4 + x_4x_3 - x_5x_2 - x_4x_2 - x_2^2 + x_4x_1 - x_3 - x_1$

$B(31)_{54} = x_6x_4^2 + x_5x_4^2 - x_6x_2^2 - x_5x_2^2 - x_6x_4 + x_4^2 - x_6x_2 + x_4x_2 - x_4x_1 - x_2x_1$

$B(31)_{55} = x_6^2x_4 + 2x_6x_5x_4 + x_5^2x_4 - x_6^2x_2 - 2x_6x_5x_2 - x_5^2x_2 + x_6x_4 + x_5x_4 - x_4^2 + x_6x_3 + x_5x_3 - x_4x_3 - x_4x_2 - x_3x_2 - x_6x_1 - x_5x_1 + x_3$

Entries of $B(2^2)$.

$B(2^2)_{11} = -x_6x_4 - x_5x_4 - x_6x_3 - x_5x_3 + x_4x_2 + x_3x_2 + x_4x_1 + x_3x_1 + x_2 + x_1$

$B(2^2)_{12} = x_5x_4 - x_4^2 + x_6x_3 + 2x_4x_3 - x_3^2 - x_4x_2 - x_3x_1 - x_2$

$B(2^2)_{13} = -x_6^3 - 2x_6^2x_5 - x_6x_5^2 + x_6^2x_4 + x_6x_4^2 + x_6^2x_3 - x_6x_3^2 + x_6^2x_2 + 2x_6x_5x_2 - x_6x_4x_2 + x_6x_3x_2 - x_6x_2^2 - x_5^2x_1 - 2x_6x_4x_1 + x_5x_4x_1 - x_4^2x_1 + x_5x_3x_1 + x_3^2x_1 + x_6x_2x_1 + x_5x_2x_1 - 2x_3x_2x_1 + 2x_6x_1^2 + x_5x_1^2 + x_4x_1^2 - x_3x_1^2 - x_2x_1^2 - x_1^3 + x_6x_3 + x_5x_3 - x_4x_3 - x_3^2 - x_6x_2 - x_5x_2 + x_2^2 + x_2x_1 + x_6 + x_4$

$B(2^2)_{14} = x_6^3 + x_6x_5^2 - 2x_6x_5x_4 - x_6^2x_3 + 2x_6x_5x_3 - x_6x_4x_3 + x_6x_3^2 - x_6^2x_2 - 2x_6x_5x_2 + x_6x_4x_2 - x_6x_3x_2 + x_6x_2^2 + 2x_6x_5x_1 + x_6x_3x_1 - x_5x_3x_1 + x_4x_3x_1 - x_3^2x_1 - x_6x_2x_1 - x_5x_2x_1 + x_4x_2x_1 + x_2^2x_1 - x_6x_1^2 - x_6x_3 + x_4x_3 + x_6x_2 + x_4x_2 - x_3x_1 - x_2x_1 - x_6$

$B(2^2)_{21} = -x_4^2 - 2x_4x_3 - x_3^2 + x_4x_2 + x_3x_2 + x_4x_1 + x_3x_1$

$B(2^2)_{22} = -x_6x_4 + x_5x_4 + x_6x_3 - x_5x_3 + 2x_4x_3 - x_3x_2 - x_4x_1 - x_2 + x_1$

$B(2^2)_{23} = -2x_6x_5x_4 + x_6x_4^2 - 2x_6x_5x_3 + x_6x_4x_3 + 2x_6x_5x_2 - x_6x_4x_2 + 2x_6x_5x_1 - 2x_6x_4x_1 - x_6x_3x_1 + x_4x_3x_1 + x_3^2x_1 + x_6x_2x_1 + x_4x_2x_1 - x_2^2x_1 + x_6x_1^2 - x_3x_1^2 - x_2x_1^2 - x_4x_3 - x_3^2 - x_4x_2 + x_2^2 + x_3x_1 + x_2x_1$

$B(2^2)_{24} = x_6^3 - 2x_6^2x_5 + x_6x_5^2 + x_6^2x_4 - x_6x_4^2 - x_6^2x_3 + 2x_6x_5x_3 - x_6x_4x_3 + x_6x_3^2 - x_6^2x_2 - x_6x_3x_2 + x_6x_2^2 - x_5^2x_1 + 2x_6x_4x_1 + x_5x_4x_1 - x_4^2x_1 + x_6x_3x_1 - x_5x_3x_1 - x_5x_2x_1 - 2x_3x_2x_1 + x_2^2x_1 - 2x_6x_1^2 + x_5x_1^2 + x_4x_1^2 + x_3x_1^2 + x_2x_1^2 - x_1^3 - x_6x_3 + x_5x_3 + x_3^2 + x_6x_2 - x_5x_2 + x_4x_2 - x_2^2 - x_3x_1 - x_6 + x_4$

$B(2^2)_{31} = -x_6 - x_5 + 1$

$B(2^2)_{32} = x_6$

$B(2^2)_{33} = -x_6x_4 - x_5x_4 - x_6x_2 - x_5x_2 + 2x_4x_2 + x_3x_2 + x_4x_1 - x_3 - x_1$

$B(2^2)_{34} = x_5x_4 - x_4^2 + x_4x_3 + x_6x_2 - 2x_4x_2 - x_2^2 + x_2x_1 + x_3$

$B(2^2)_{41} = 0$ (this is the only zero entry in all five matrices)

$B(2^2)_{42} = x_6 - x_5 + 1$

$B(2^2)_{43} = -x_4^2 - x_4x_3 + 2x_4x_2 + x_3x_2 - x_2^2 + x_4x_1 - x_2x_1$

$B(2^2)_{44} = -x_6x_4 + x_5x_4 + x_4x_3 + x_6x_2 - x_5x_2 - x_3x_2 - x_4x_1 + x_2x_1 + x_3 - x_1$

Entries of $B(21^2)$.

$B(21^2)_{11} = x_5x_4^2 - x_5x_3^2 - x_5x_4x_2 + x_5x_3x_2 - x_5x_4x_1 + x_5x_3x_1 + x_6x_4 - x_5x_4 + x_4^2 - x_4x_3 - x_4x_2 + x_3x_2 + x_2$

$B(21^2)_{12} = x_6x_4^2 - x_6x_3^2 - x_6x_4x_2 + x_6x_3x_2 - x_6x_4x_1 + x_6x_3x_1 - x_4^2 + x_6x_3 - x_5x_3 + x_4x_3 + x_4x_2 - x_3x_2 + x_1$

$B(21^2)_{13} = -x_6x_4^3 + x_5x_4^3 + x_4^4 - x_4^3x_3 + x_6x_4x_3^2 - x_5x_4x_3^2 - x_4^2x_3^2 + x_4x_3^3 - 2x_4^3x_2 - x_6x_4x_3x_2 + x_5x_4x_3x_2 + 2x_4^2x_3x_2 + x_6x_3^2x_2 - x_5x_3^2x_2 + x_6x_4x_2^2 - x_5x_4x_2^2 + x_4^2x_2^2 - x_6x_3x_2^2 + x_5x_3x_2^2 - x_4x_3x_2^2 + x_6x_4^2x_1 - x_5x_4^2x_1 - x_6x_4x_3x_1 + x_5x_4x_3x_1 + 2x_4^2x_3x_1 - 2x_4x_3^2x_1 + x_6x_4x_2x_1 - x_5x_4x_2x_1 - x_6x_3x_2x_1 + x_5x_3x_2x_1 - x_4^2x_1^2 + x_4x_3x_1^2 - x_6^3 + 2x_6^2x_5 - x_6x_5^2 + x_6x_4x_3 + x_4^2x_3 - x_6x_3^2 - x_3^3 + x_6x_4x_2 - x_4x_3x_2 + x_3^2x_2 - x_6x_2^2 - x_6^2x_1 + 2x_6x_5x_1 - x_5^2x_1 - x_6x_4x_1 - x_5x_4x_1 + x_4^2x_1 + x_5x_3x_1 - 2x_4x_3x_1 + x_3^2x_1 + x_5x_2x_1 - 2x_4x_2x_1 + x_3x_2x_1 + x_2^2x_1 + x_6x_1^2 - x_5x_1^2 + x_4x_1^2 - x_2x_1^2 - x_6x_3 + x_5x_3 + x_4x_3 - x_3^2 + x_6x_2 - x_5x_2 - x_3x_2 + x_3x_1 + x_6 + x_4$

$B(21^2)_{14} = x_6x_4^3 - x_5x_4^3 - x_4^4 + x_4^3x_3 - x_6x_4x_3^2 + x_5x_4x_3^2 + x_4^2x_3^2 - x_4x_3^3 - x_6x_4^2x_2 + x_5x_4^2x_2 + x_4^3x_2 + x_6x_4x_3x_2 - x_5x_4x_3x_2 - 2x_4^2x_3x_2 + x_4x_3^2x_2 + x_4^2x_2^2 - x_3^2x_2^2 - x_4x_2^3 + x_3x_2^3 - x_6x_4^2x_1 + x_5x_4^2x_1 + x_6x_4x_3x_1 - x_5x_4x_3x_1 - 2x_4^2x_3x_1 + 2x_4x_3^2x_1 + x_4^2x_2x_1 - x_4x_3x_2x_1 - x_4x_2^2x_1 + x_3x_2^2x_1 + x_4^2x_1^2 - x_4x_3x_1^2 - x_6^2x_4 + 2x_6x_5x_4 + x_6^2x_3 - x_6x_4x_3 - x_4^2x_3 + x_3^3 + x_6^2x_2 - 2x_6x_5x_2 + x_6x_3x_2 + x_4x_3x_2 - x_3^2x_2 - 2x_6x_5x_1 + x_5^2x_1 - x_6x_4x_1 - x_6x_3x_1 - x_5x_3x_1 + 2x_4x_3x_1 - x_3^2x_1 + x_6x_2x_1 - x_3x_2x_1 + x_6x_1^2 + x_5x_1^2 + x_3x_1^2 - x_1^3 + x_6x_3 - x_5x_3 - x_4x_3 + x_3^2 - x_6x_2 + x_5x_2 - x_4x_2 + x_3x_2 + x_2^2 - x_3x_1 - x_4$

$B(21^2)_{15} = -x_6x_4^3 + x_5x_4^3 + x_4^4 - x_4^3x_3 + x_6x_4x_3^2 - x_5x_4x_3^2 - x_4^2x_3^2 + x_4x_3^3 + x_6x_4^2x_2 - x_5x_4^2x_2 - 2x_4^3x_2 - x_6x_4x_3x_2 + x_5x_4x_3x_2 + x_4^2x_3x_2 + x_3^2x_2 + x_4^2x_2^2 - x_3^2x_2^2 + x_6x_4^2x_1 - x_5x_4^2x_1 - x_6x_4x_3x_1 + x_5x_4x_3x_1 + 2x_4^2x_3x_1 - 2x_4x_3^2x_1 + x_4^2x_2x_1 + x_4x_3x_2x_1 - 2x_3^2x_2x_1 - x_4x_2^2x_1 + x_3x_2^2x_1 - x_4^2x_1^2 + x_4x_3x_1^2 - x_4x_2x_1^2 + x_3x_2x_1^2 + x_6^2x_4 - x_6x_4^2 - x_6^2x_3 + 2x_6x_5x_3 + x_4^2x_3 - x_3^3 - x_6^2x_2 + x_6x_4x_2 - x_6x_3x_2 - x_4x_3x_2 + x_3^2x_2 - x_5^2x_1 - x_5x_4x_1 + x_4^2x_1 - x_6x_3x_1 - x_4x_3x_1 + x_3^2x_1 + x_6x_2x_1 + x_5x_2x_1 - x_4x_2x_1 + x_3x_2x_1 + x_6x_1^2 - x_2x_1^2 - x_6x_3 + x_5x_3 + x_4x_3 - x_3^2 + x_6x_2 - x_5x_2 - 2x_3x_2 + x_3x_1 + x_2x_1 + x_4$

$B(21^2)_{21} = x_6x_3 - x_5x_3 - x_4x_3 + x_3^2 + x_3x_2 - x_3x_1 + x_1$

$B(21^2)_{22} = x_6x_4 - x_5x_4 - x_4^2 + x_4x_3 + x_4x_2 - x_4x_1 + x_2$

$B(21^2)_{23} = -x_6^3 + 2x_6^2x_5 - x_6x_5^2 + 2x_6^2x_4 - 2x_6x_5x_4 - x_6x_4^2 - 2x_6^2x_3 + 2x_6x_5x_3 + 2x_6x_4x_3 - x_6x_3^2 - 2x_6^2x_2 + 2x_6x_5x_2 + 2x_6x_4x_2 - 2x_6x_3x_2 - x_6x_2^2 + x_6^2x_1 - x_5^2x_1 - x_6x_4x_1 - x_5x_4x_1 + x_6x_3x_1 + x_5x_3x_1 + x_6x_2x_1 + x_5x_2x_1 - x_5x_1^2 - x_6x_3 + x_5x_3 + x_6x_2 - x_5x_2 - x_4x_2 + x_3x_2 + x_2^2 - x_2x_1 + x_6 + x_4$

$B(21^2)_{24} = x_6^3 - 2x_6^2x_5 + x_6x_5^2 - 2x_6^2x_4 + 2x_6x_5x_4 + x_6x_4^2 + 2x_6^2x_3 - 2x_6x_5x_3 - 2x_6x_4x_3 + x_6x_3^2 + 2x_6^2x_2 - 2x_6x_5x_2 - 2x_6x_4x_2 + 2x_6x_3x_2 + x_6x_2^2 - 2x_6^2x_1 + 2x_6x_5x_1 + x_6x_4x_1 + x_5x_4x_1 + x_4^2x_1 - 2x_6x_3x_1 - x_4x_3x_1 - x_6x_2x_1 - x_5x_2x_1 - 2x_4x_2x_1 + x_3x_2x_1 + x_2^2x_1 + x_6x_1^2 + x_4x_1^2 - x_2x_1^2 - x_4x_3 + x_3x_2 - x_6$

$B(21^2)_{25} = -x_6^3 + 2x_6^2x_5 - x_6x_5^2 + 2x_6^2x_4 - 2x_6x_5x_4 - x_6x_4^2 - 2x_6^2x_3 + 2x_6x_5x_3 + 2x_6x_4x_3 - x_6x_3^2 - 2x_6^2x_2 + 2x_6x_5x_2 + 2x_6x_4x_2 - 2x_6x_3x_2 - x_6x_2^2 + 2x_6^2x_1 - 2x_6x_5x_1 - 2x_6x_4x_1 + x_6x_3x_1 + x_5x_3x_1 + x_4x_3x_1 - x_3^2x_1 + 2x_6x_2x_1 - x_3x_2x_1 - x_5x_1^2 - x_4x_1^2 + 2x_3x_1^2 + x_2x_1^2 - x_1^3 - x_3^2 + x_3x_1 + x_6$

$B(21^2)_{31} = x_6x_5 - x_5^2 + 1$

$B(21^2)_{32} = x_6^2 - x_6x_5$

$B(21^2)_{33} = -x_6^2x_4 + 2x_6x_5x_4 - x_5^2x_4 + x_6x_4^2 - x_5x_4^2 - x_6x_4x_3 + x_5x_4x_3 - x_6^2x_2 + 2x_6x_5x_2 - x_5^2x_2 - x_6x_4x_2 + x_5x_4x_2 + x_6x_4x_1 - x_5x_4x_1 + x_4^2 + x_6x_3 - x_5x_3 - x_4x_3 - x_4x_2 + x_3x_2 + x_6x_1 - x_5x_1$

$B(21^2)_{34} = x_6^2x_4 - 2x_6x_5x_4 + x_5^2x_4 - x_6x_4^2 + x_5x_4^2 + x_6x_4x_3 - x_5x_4x_3 + x_6x_2^2 - x_5x_2^2 - x_6x_4x_1 + x_5x_4x_1 + x_6x_4 - x_6x_3 + x_5x_3 - x_6x_2 - x_4x_1 + x_2x_1$

$B(21^2)_{35} = -x_6^2x_4 + 2x_6x_5x_4 - x_5^2x_4 + x_6x_4^2 - x_5x_4^2 - x_6x_4x_3 + x_5x_4x_3 - x_6x_4x_2 + x_5x_4x_2 - x_6x_3x_2 + x_5x_3x_2 + x_6x_4x_1 - x_5x_4x_1 + x_6x_2x_1 - x_5x_2x_1 + x_5x_4 + x_6x_3 - x_5x_3 - x_5x_2 - x_4x_2 + x_2^2 + x_3 - x_1$

$B(21^2)_{41} = x_6x_5x_4 + x_5^2x_4 - x_6x_5x_3 - x_5^2x_3 - x_5x_4x_2 + x_5x_3x_2 - x_5x_4x_1 + x_5x_3x_1 + x_6x_4 + x_4^2 - x_6x_3 - x_4x_3 - x_5x_2 + x_5x_1 - x_4x_1 + x_3x_1$

$B(21^2)_{42} = x_6^2x_4 + x_6x_5x_4 - x_6^2x_3 - x_6x_5x_3 - x_6x_4x_2 + x_6x_3x_2 - x_6x_4x_1 + x_6x_3x_1 - x_6x_4 + x_6x_3 + x_4x_3 - x_3^2 - x_6x_2 + x_6x_1 + x_4x_1 - x_3x_1$

$B(21^2)_{43} = -x_6^2x_4^2 + x_5^2x_4^2 + x_6x_4^3 + x_5x_4^3 + x_6^2x_4x_3 - x_5^2x_4x_3 - 2x_6x_4^2x_3 - 2x_5x_4^2x_3 + x_6x_4x_3^2 + x_5x_4x_3^2 - x_6^2x_4x_2 + x_5^2x_4x_2 - 2x_5x_4^2x_2 - x_4^3x_2 + x_6^2x_3x_2 - x_5^2x_3x_2 + 2x_5x_4x_3x_2 + 2x_4^2x_3x_2 - x_4x_3^2x_2 + x_6x_4x_2^2 - x_5x_4x_2^2 + x_4^2x_2^2 - x_6x_3x_2^2 + x_5x_3x_2^2 - x_4x_3x_2^2 + 2x_6x_4^2x_1 - x_4^3x_1 - 2x_6x_4x_3x_1 + 2x_4^2x_3x_1 - x_4x_3^2x_1 + x_6x_4x_2x_1 - x_5x_4x_2x_1 - x_6x_3x_2x_1 + x_5x_3x_2x_1 - x_4^2x_1^2 + x_4x_3x_1^2 - x_6^2x_4 + 2x_6x_5x_4 + x_6^2x_3 - 2x_6x_5x_3 + x_6x_4x_3 + x_5x_4x_3 - x_6x_3^2 - x_5x_3^2 + x_6^2x_2 - x_5x_4x_2 - x_4^2x_2 + x_6x_3x_2 + x_3^2x_2 + x_6x_2^2 - x_5x_2^2 + x_4x_2^2 - x_6^2x_1 - x_6x_4x_1 + 2x_5x_4x_1 + 2x_4^2x_1 - x_5x_3x_1 - 4x_4x_3x_1 + 2x_3^2x_1 - 3x_6x_2x_1 + x_5x_2x_1 - 3x_4x_2x_1 + x_3x_2x_1 + 2x_6x_1^2 + x_4x_1^2 + x_2x_1^2 - x_1^3 + x_4x_3 - x_3^2 + x_4x_2 - 2x_3x_2 + x_3x_1 - x_2x_1 + x_1^2$

$B(21^2)_{44} = x_6^2x_4^2 - x_5^2x_4^2 - x_6x_4^3 - x_5x_4^3 - x_6^2x_4x_3 + x_5^2x_4x_3 + 2x_6x_4^2x_3 + 2x_5x_4^2x_3 - x_6x_4x_3^2 - x_5x_4x_3^2 - x_6x_4^2x_2 + x_5x_4^2x_2 + x_4^3x_2 + x_6x_4x_3x_2 - x_5x_4x_3x_2 - 2x_4^2x_3x_2 + x_4x_3^2x_2 + x_6x_4x_2^2 + x_5x_4x_2^2 - x_6x_3x_2^2 - x_5x_3x_2^2 - x_4x_3^2 + x_3x_2^3 - 2x_6x_4^2x_1 + x_4^3x_1 + 2x_6x_4x_3x_1 - 2x_4^2x_3x_1 + x_4x_3^2x_1 + x_4^2x_2x_1 - x_4x_3x_2x_1 - x_4x_2^2x_1 + x_3x_2^2x_1 + x_4^2x_1^2 - x_4x_3x_1^2 + 2x_6^2x_5 - x_6x_4^2 - x_6^2x_3 - x_5x_4x_3 + x_6x_3^2 + x_5x_3^2 - x_6^2x_2 + x_5x_4x_2 + x_4^2x_2 - x_6x_3x_2 - x_3^2x_2 - x_2^3 - 4x_6x_5x_1 + 2x_6x_4x_1 - 2x_5x_4x_1 - 2x_4^2x_1 + x_6x_3x_1 + x_5x_3x_1 + 4x_4x_3x_1 - 2x_3^2x_1 + 2x_6x_2x_1 + 2x_4x_2x_1 - x_3x_2x_1 + x_2^2x_1 + 2x_5x_1^2 - 2x_4x_1^2 - x_2x_1^2 + x_6x_3 - x_6x_2 - x_4x_2 + 2x_3x_2 - 2x_3x_1 + x_2x_1$

$B(21^2)_{45} = -x_6^2x_4^2 + x_5^2x_4^2 + x_6x_4^3 + x_5x_4^3 + x_6^2x_4x_3 - x_5^2x_4x_3 - 2x_6x_4^2x_3 - 2x_5x_4^2x_3 + x_6x_4x_3^2 + x_5x_4x_3^2 - 2x_5x_4^2x_2 - x_4^3x_2 - x_6x_4x_3x_2 + x_5x_4x_3x_2 + 2x_4^2x_3x_2 + x_6x_3^2x_2 + x_5x_3^2x_2 - x_4x_3^2x_2 + x_4^2x_2^2 - x_3^2x_2^2 + 2x_6x_4^2x_1 - x_4^3x_1 - 2x_6x_4x_3x_1 + 2x_4^2x_3x_1 - x_4x_3^2x_1 + x_6x_4x_2x_1 + x_5x_4x_2x_1 - x_6x_3x_2x_1 - x_5x_3x_2x_1 + x_4x_3x_2x_1 - x_3^2x_2x_1 - x_4x_2^2x_1 + x_3x_2^2x_1 - x_4^2x_1^2 + x_4x_3x_1^2 - x_4x_2x_1^2 + x_3x_2x_1^2 + x_6^3 + x_6x_5^2 - x_6^2x_4 + x_5x_4x_3 - x_5x_3^2 - 2x_6x_5x_2 + x_6x_4x_2 - x_5x_4x_2 - x_4^2x_2 + x_3^2x_2 + x_6x_2^2 + x_4x_2^2 + x_3x_2^2 - 2x_6^2x_1 - x_5^2x_1 + x_6x_4x_1 + 2x_5x_4x_1 + 2x_4^2x_1 - x_5x_3x_1 - 4x_4x_3x_1 + 2x_3^2x_1 + 2x_5x_2x_1 - 3x_4x_2x_1 - 2x_2^2x_1 + x_6x_1^2 + x_4x_1^2 - x_3x_1^2 + x_2x_1^2 + x_5x_3 - x_5x_2 + x_4x_2 - 3x_3x_2 + x_2^2 + x_3x_1 - x_6 + x_4$

$B(21^2)_{51} = x_6x_5 - x_5^2 + x_6 - x_5$

$B(21^2)_{52} = x_6^2 - x_6x_5 - x_6 + x_5 + 1$

$B(21^2)_{53} = -x_6^2x_4 + 2x_6x_5x_4 - x_5^2x_4 + x_6x_4^2 - x_5x_4^2 - x_6x_4x_3 + x_5x_4x_3 - x_6^2x_2 + 2x_6x_5x_2 - x_5^2x_2 - x_6x_4x_2 + x_5x_4x_2 + x_6x_4x_1 - x_5x_4x_1 + x_6x_3 - x_5x_3 + x_4x_2 - x_2^2 + x_6x_1 - x_5x_1 - x_4x_1 + x_2x_1$

$B(21^2)_{54} = x_6^2x_4 - 2x_6x_5x_4 + x_5^2x_4 - x_6x_4^2 + x_5x_4^2 + x_6x_4x_3 - x_5x_4x_3 + x_6x_2^2 - x_5x_2^2 - x_6x_4x_1 + x_5x_4x_1 + x_5x_4 - x_6x_3 + x_5x_3 - x_4x_3 - x_5x_2 + x_3x_2 + x_3 - x_1$

$B(21^2)_{55} = -x_6^2x_4 + 2x_6x_5x_4 - x_5^2x_4 + x_6x_4^2 - x_5x_4^2 - x_6x_4x_3 + x_5x_4x_3 - x_6x_4x_2 + x_5x_4x_2 - x_6x_3x_2 + x_5x_3x_2 + x_6x_4x_1 - x_5x_4x_1 + x_6x_2x_1 - x_5x_2x_1 + x_6x_4 - x_4^2 + x_6x_3 - x_5x_3 - x_6x_2 + x_4x_2$

Entries of $B(1^4)$.

$B(1^4)_{11} = -x_6x_4 + x_5x_4 + x_4^2 + x_6x_3 - x_5x_3 - 2x_4x_3 + x_3^2 - x_4x_2 + x_3x_2 + x_4x_1 - x_3x_1 - x_2 + x_1$

$B(1^4)_{12} = x_6^3 - 2x_6^2x_5 + x_6x_5^2 - 2x_6^2x_4 + 2x_6x_5x_4 + x_6x_4^2 + 2x_6^2x_3 - 2x_6x_5x_3 - 2x_6x_4x_3 + x_6x_3^2 + 2x_6^2x_2 - 2x_6x_5x_2 - 2x_6x_4x_2 + 2x_6x_3x_2 + x_6x_2^2 - 3x_6^2x_1 + 4x_6x_5x_1 - x_5^2x_1 + 4x_6x_4x_1 - 2x_5x_4x_1 - x_4^2x_1 - 4x_6x_3x_1 + 2x_5x_3x_1 + 2x_4x_3x_1 - x_3^2x_1 - 4x_6x_2x_1 + 2x_5x_2x_1 + 2x_4x_2x_1 - 2x_3x_2x_1 - x_2^2x_1 + 3x_6x_1^2 - 2x_5x_1^2 - 2x_4x_1^2 + 2x_3x_1^2 + 2x_2x_1^2 - x_1^3 - x_6x_3 + x_5x_3 + x_4x_3 - x_3^2 + x_6x_2 - x_5x_2 - x_4x_2 + x_2^2 + x_3x_1 - x_2x_1 - x_6 + x_4$

$B(1^4)_{21} = x_6 - x_5 + 1$

$B(1^4)_{22} = -x_6x_4 + x_5x_4 + x_4^2 - x_4x_3 + x_6x_2 - x_5x_2 - 2x_4x_2 + x_3x_2 + x_2^2 + x_4x_1 - x_2x_1 + x_3 - x_1$

```
Ground<[x]> := PolynomialRing(RationalField(),6,"grevlex");

mat4 := Matrix(Ground,[
[
 - x[6]*x[4] - x[5]*x[4] - x[4]^2 - x[6]*x[3] - x[5]*x[3] - 2*x
    [4]*x[3] - x[3]^2 - x[4]*x[2] - x[3]*x[2] - x[4]*x[1] - x[3]*x
    [1] + x[2] + x[1],
 - x[6]^3 - 2*x[6]^2*x[5] - x[6]*x[5]^2 - 2*x[6]^2*x[4] - 2*x[6]*x
    [5]*x[4] - x[6]*x[4]^2 - 2*x[6]^2*x[3] - 2*x[6]*x[5]*x[3] - 2*
    x[6]*x[4]*x[3] -  x[6]*x[3]^2 - 2*x[6]^2*x[2] - 2*x[6]*x[5]*x
    [2] - 2*x[6]*x[4]*x[2] - 2*x[6]*x[3]*x[2] - x[6]*x[2]^2 - 3*x
    [6]^2*x[1] - 4*x[6]*x[5]*x[1] - x[5]^2*x[1] -  4*x[6]*x[4]*x
    [1] - 2*x[5]*x[4]*x[1] - x[4]^2*x[1] - 4*x[6]*x[3]*x[1] - 2*x
    [5]*x[3]*x[1] - 2*x[4]*x[3]*x[1] - x[3]^2*x[1] - 4*x[6]*x[2]*x
    [1] - 2*x[5]*x[2]*x[1] -  2*x[4]*x[2]*x[1] - 2*x[3]*x[2]*x[1]
    - x[2]^2*x[1] - 3*x[6]*x[1]^2 - 2*x[5]*x[1]^2 - 2*x[4]*x[1]^2
    - 2*x[3]*x[1]^2 - 2*x[2]*x[1]^2 -  x[1]^3 + x[6]*x[3] + x[5]*x
    [3] + x[4]*x[3] + x[3]^2 - x[6]*x[2] - x[5]*x[2] - x[4]*x[2] -
     x[2]^2 + x[3]*x[1] - x[2]*x[1] + x[6] + x[4]
],
[
 - x[6] - x[5] + 1,
 - x[6]*x[4] - x[5]*x[4] - x[4]^2 - x[4]*x[3] - x[6]*x[2] - x[5]*x
    [2] - 2*x[4]*x[2] - x[3]*x[2] - x[2]^2 - x[4]*x[1] - x[2]*x[1]
     - x[3] - x[1]
]
]);

mat31 := Matrix(Ground,[
[
 - x[6]^2*x[4] + x[6]*x[5]*x[4] - x[6]*x[4]^2 + x[5]*x[4]^2 - x
    [6]^2*x[3] + x[6]*x[5]*x[3] + x[6]*x[3]^2 - x[5]*x[3]^2 + x
    [6]*x[4]*x[1] - x[5]*x[4]*x[1] + x[6]*x[3]*x[1] - x[5]*x[3]*x
    [1] - x[6]*x[4] - x[5]*x[4] + x[4]*x[2] + x[4]*x[1] + x[2],
x[6]^2*x[4] - x[6]*x[5]*x[4] + x[6]*x[4]^2 - x[5]*x[4]^2 + x[6]^2*
   x[3] - x[6]*x[5]*x[3] - x[6]*x[3]^2 + x[5]*x[3]^2 - x[6]*x[4]*x
   [1] + x[5]*x[4]*x[1] - x[6]*x[3]*x[1] + x[5]*x[3]*x[1] - x[6]*x
   [3] - x[5]*x[3] + x[3]*x[2] + x[3]*x[1] + x[1],
```

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 - x[6]*x[4]^2*x[3] - x[4]^3*x[3] - x[6]*x[4]*x[3]^2 + x[4]*x[3]^3
     + x[6]*x[4]*x[3]*x[2]  + x[4]^2*x[3]*x[2] + x[6]*x[3]^2*x[2]
    - x[3]^3*x[2] - x[6]*x[4]^2*x[1] - x[4]^3*x[1] - x[6]*x[4]*x
    [3]*x[1] + x[4]^2*x[3]*x[1] + 2*x[4]*x[3]^2*x[1] + x[6]*x[4]*x
    [2]*x[1] + x[4]^2*x[2]*x[1] + x[6]*x[3]*x[2]*x[1] - x[4]*x[3]*
    x[2]*x[1] - 2*x[3]^2*x[2]*x[1] + x[4]^2*x[1]^2 + x[4]*x[3]*x
    [1]^2 - x[4]*x[2]*x[1]^2 - x[3]*x[2]*x[1]^2 + 2*x[6]^2*x[5] -
    x[6]^2*x[4] + 2*x[6]*x[5]*x[4] - x[6]*x[4]^2 - 2*x[6]*x[5]*x
    [3] + x[6]*x[4]*x[3] - x[6]^2*x[1] - x[6]*x[4]*x[1] + 2*x[5]*x
    [4]*x[1] - x[4]^2*x[1] + 2*x[6]*x[3]*x[1] - x[5]*x[3]*x[1] + x
    [4]*x[3]*x[1] - x[3]*x[2]*x[1] + x[6]*x[1]^2 - x[5]*x[1]^2 - x
    [2]*x[1]^2 - x[6]*x[3] - x[4]*x[3] + x[6]*x[2] + x[4]*x[2] - x
    [3]*x[2] - x[2]*x[1],
 - x[6]*x[4]^3 - x[4]^4 - x[6]*x[4]^2*x[3] + x[4]^2*x[3]^2 + x[6]*
    x[4]*x[2]^2 + x[4]^2*x[2]^2 + x[6]*x[3]*x[2]^2 - x[3]^2*x[2]^2
     + x[4]^3*x[1] + x[4]^2*x[3]*x[1] - x[4]*x[2]^2*x[1] - x[3]*x
    [2]^2*x[1]  + x[6]^3 + x[6]*x[5]^2 - 2*x[6]*x[5]*x[4] - x
    [6]^2*x[3] + 2*x[6]*x[5]*x[3] - x[6]*x[4]*x[3] + x[6]*x[3]^2 -
     x[6]^2*x[2] - 2*x[6]*x[5]*x[2] + x[6]*x[4]*x[2] - x[6]*x[3]*x
    [2] + x[6]*x[2]^2 + x[6]^2*x[1] + x[5]^2*x[1] + 3*x[6]*x[4]*x
    [1] - x[5]*x[4]*x[1] - 2*x[6]*x[3]*x[1] + 2*x[5]*x[3]*x[1] - x
    [4]*x[3]*x[1] + x[3]^2*x[1] + x[6]*x[2]*x[1] - x[5]*x[2]*x[1]
    - x[3]*x[2]*x[1] - x[6]*x[1]^2 + x[4]*x[1]^2 - x[3]*x[1]^2 - x
    [1]^3 - x[5]*x[3] - x[3]^2 + x[5]*x[2] - x[4]*x[2] + x[3]*x[2]
     - x[2]^2 - x[6] - x[4],
 - x[6]^2*x[4]^2 - x[6]*x[5]*x[4]^2 - x[6]*x[4]^3 - x[5]*x[4]^3 -
    x[6]^2*x[4]*x[3] - x[6]*x[5]*x[4]*x[3] + x[6]*x[4]*x[3]^2 + x
    [5]*x[4]*x[3]^2 + x[6]^2*x[4]*x[2] + x[6]*x[5]*x[4]*x[2] + x
    [6]*x[4]^2*x[2] + x[5]*x[4]^2*x[2] + x[6]^2*x[3]*x[2] + x[6]*x
    [5]*x[3]*x[2] - x[6]*x[3]^2*x[2] - x[5]*x[3]^2*x[2] + x[6]*x
    [4]^2*x[1] + x[5]*x[4]^2*x[1] + x[6]*x[4]*x[3]*x[1] + x[5]*x
    [4]*x[3]*x[1] - x[6]*x[4]*x[2]*x[1] - x[5]*x[4]*x[2]*x[1] - x
    [6]*x[3]*x[2]*x[1] - x[5]*x[3]*x[2]*x[1] - x[6]^3 - 2*x[6]^2*x
    [5] - x[6]*x[5]^2 + x[6]^2*x[4] + x[6]*x[4]^2 + x[6]^2*x[3] -
    x[6]*x[4]*x[3] - x[4]^2*x[3] - 2*x[6]*x[3]^2 + x[3]^3 + x
    [6]^2*x[2] + 2*x[6]*x[5]*
x[2] - x[6]*x[4]*x[2] + x[6]*x[3]*x[2] - x[6]*x[2]^2 + x[6]^2*x[1]
    + 2*x[6]*x[5]*x[1] + 2*x[4]^2*x[1] + 2*x[6]*x[3]*x[1] + x[4]*x
   [3]*x[1] - x[3]^2*x[1] - x[6]*x[2]*x[1] + x[5]*x[2]*x[1] - x
   [4]*x[2]*x[1] + x[3]*x[2]*x[1] - x[2]^2*x[1] + x[5]*x[1]^2 - 3*
   x[4]*x[1]^2 - x[3]*x[1]^2 - x[2]*x[1]^2 - x[3]*x[2] - x[3]*x[1]
    + x[6]
],
[
```

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 - x[6]^2*x[4] + 2*x[6]*x[5]*x[4] - x[5]^2*x[4] - x[6]*x[4]^2 + x
    [5]*x[4]^2 - x[6]^2*x[3] + 2*x[6]*x[5]*x[3] - x[5]^2*x[3] - x
    [6]*x[4]*x[3] + x[5]*x[4]*x[3] + x[6]*x[4]*x[2] - x[5]*x[4]*x
    [2] + x[6]*x[3]*x[2] - x[5]*x[3]*x[2] - x[4]^2 - x[4]*x[3] - x
    [6]*x[2] + x[5]*x[2] + x[4]*x[2] - x[6]*x[1] + x[5]*x[1] + x
    [4]*x[1],
x[6]^2*x[4] - 2*x[6]*x[5]*x[4] + x[5]^2*x[4] + x[6]*x[4]^2 - x[5]*
   x[4]^2 + x[6]^2*x[3] -  2*x[6]*x[5]*x[3] + x[5]^2*x[3] + x[6]*x
   [4]*x[3] - x[5]*x[4]*x[3] - x[6]*x[4]*x[2] + x[5]*x[4]*x[2] - x
   [6]*x[3]*x[2] + x[5]*x[3]*x[2] - x[4]*x[3] - x[3]^2 + x[6]*x[2]
    - x[5]*x[2] + x[3]*x[2] + x[6]*x[1] - x[5]*x[1] + x[3]*x[1],
 - x[6]*x[4]^2*x[3] + x[5]*x[4]^2*x[3] - x[4]^3*x[3] - x[6]*x[4]*x
    [3]^2 + x[5]*x[4]*x[3]^2 - x[4]^2*x[3]^2 + x[6]*x[4]*x[3]*x[2]
     - x[5]*x[4]*x[3]*x[2] + 2*x[4]^2*x[3]*x[2] + x[6]*x[3]^2*x[2]
     - x[5]*x[3]^2*x[2] + 2*x[4]*x[3]^2*x[2] - x[4]*x[3]*x[2]^2 -
    x[3]^2*x[2]^2 - x[6]*x[4]^2*x[1] + x[5]*x[4]^2*x[1] - x[4]^3*x
    [1] - x[6]*x[4]*x[3]*x[1] + x[5]*x[4]*x[3]*x[1] - x[4]^2*x[3]*
    x[1] +  x[6]*x[4]*x[2]*x[1] - x[5]*x[4]*x[2]*x[1] + 2*x[4]^2*x
    [2]*x[1] + x[6]*x[3]*x[2]*x[1] - x[5]*x[3]*x[2]*x[1] + 2*x[4]*
    x[3]*x[2]*x[1] - x[4]*x[2]^2*x[1] - x[3]*x[2]^2*x[1] - x[6]^3
    + 2*x[6]^2*x[5] - x[6]*x[5]^2 - x[6]^2*x[4] + 2*x[6]*x[5]*x[4]
     + x[6]^2*x[3] - x[6]*x[3]^2 + x[6]^2*x[2] - 2*x[6]*x[5]*x[2]
    + x[6]*x[4]*x[2] + x[6]*x[3]*x[2] - x[4]*x[3]*x[2] - x[6]*x
    [2]^2 + x[3]*x[2]^2 -  2*x[6]^2*x[1] + 2*x[6]*x[5]*x[1] - x
    [5]^2*x[1] - 3*x[6]*x[4]*x[1] + 2*x[5]*x[4]*x[1] + x[6]*x[3]*x
    [1] + 2*x[6]*x[2]*x[1] - 2*x[5]*x[2]*x[1] + x[3]*x[2]*x[1] -
    2*x[4]*x[1]^2 + x[2]*x[1]^2 - x[6]*x[3] + x[5]*x[3] - x[4]*x
    [3] + x[6]*x[2] - x[5]*x[2] + x[4]*x[2] + x[3]*x[2] - x[2]^2 +
     x[6] + x[4],
 - x[6]*x[4]^3 + x[5]*x[4]^3 - x[4]^4 - x[6]*x[4]^2*x[3] + x[5]*x
    [4]^2*x[3] - x[4]^3*x[3] + x[4]^3*x[2] + x[4]^2*x[3]*x[2] + x
    [6]*x[4]*x[2]^2 - x[5]*x[4]*x[2]^2 + x[4]^2*x[2]^2 + x[6]*x
    [3]*x[2]^2 - x[5]*x[3]*x[2]^2 + x[4]*x[3]*x[2]^2 - x[4]*x[2]^3
     - x[3]*x[2]^3 + x[6]^3 - 2*x[6]^2*x[5] + x[6]*x[5]^2 + x
    [6]^2*x[4] - x[6]*x[4]^2 - x[6]^2*x[3] + 2*x[6]*x[5]*x[3] - x
    [6]*x[4]*x[3] + x[6]*x[3]^2 - x[6]^2*x[2] - x[4]^2*x[2] - x
    [6]*x[3]*x[2] + x[6]*x[2]^2 + x[2]^3 + 2*x[6]^2*x[1] - 4*x[6]*
    x[5]*x[1] + x[5]^2*x[1] + 3*x[6]*x[4]*x[1] - x[4]^2*x[1] - 2*x
    [6]*x[3]*x[1] + 2*x[5]*x[3]*x[1] + x[3]^2*x[1] - x[6]*x[2]*x
    [1] + x[2]^2*x[1] + x[6]*x[1]^2 - 2*x[5]*x[1]^2 + x[4]*x[1]^2
    - x[3]*x[1]^2 - x[2]*x[1]^2 + x[6]*x[3] - x[5]*x[3] - x[3]^2 -
     x[6]*x[2] +  x[5]*x[2] + x[3]*x[2] + x[3]*x[1] - x[2]*x[1] -
    x[6] - x[4],
```

```
 - x[6]^2*x[4]^2 + x[5]^2*x[4]^2 - x[6]*x[4]^3 - x[5]*x[4]^3 - x
    [6]^2*x[4]*x[3] + x[5]^2*x[4]*x[3] - x[6]*x[4]^2*x[3] - x[5]*x
    [4]^2*x[3] + x[6]^2*x[4]*x[2] - x[5]^2*x[4]*x[2] + 2*x[6]*x
    [4]^2*x[2] + 2*x[5]*x[4]^2*x[2] + x[6]^2*x[3]*x[2] - x[5]^2*x
    [3]*x[2] + 2*x[6]*x[4]*x[3]*x[2] + 2*x[5]*x[4]*x[3]*x[2] - x
    [6]*x[4]*x[2]^2 - x[5]*x[4]*x[2]^2 - x[6]*x[3]*x[2]^2 - x[5]*x
    [3]*x[2]^2 - 2*x[6]*x[5]*x[4] + x[6]*x[4]^2 - 2*x[6]*x[5]*x[3]
     + x[5]*x[4]*x[3] - x[4]^2*x[3] - x[6]*x[3]^2 + x[5]*x[3]^2 -
    x[4]*x[3]^2 + 2*x[6]*x[5]*x[2] - 2*x[6]*x[4]*x[2] - x[5]*x[4]*
    x[2] + x[4]*x[3]*x[2] + x[3]^2*x[2] + x[6]*x[2]^2 + x[5]*x
    [2]^2 + 2*x[6]*x[5]*x[1] + x[6]*x[4]*x[1] - 3*x[5]*x[4]*x[1] +
     2*x[4]^2*x[1] + 3*x[6]*x[3]*x[1] - 2*x[5]*x[3]*x[1] + 2*x[4]*
    x[3]*x[1] - x[6]*x[2]*x[1] + 2*x[5]*x[2]*x[1] - 2*x[4]*x[2]*x
    [1] - x[3]*x[2]*x[1] - 2*x[6]*x[1]^2 + x[5]*x[1]^2 + x[3]*x
    [1]^2 - x[2]*x[1]^2 - x[1]^3 + x[4]*x[3] + x[3]^2 - 2*x[3]*x
    [2] - 2*x[3]*x[1] + x[2]*x[1] + x[1]^2
],
[
 - x[6]^2*x[4] + x[6]*x[5]*x[4] - x[6]*x[4]^2 + x[5]*x[4]^2 - x
    [6]^2*x[3] + x[6]*x[5]*x[3] - x[6]*x[4]*x[3] + x[5]*x[4]*x[3]
    - x[6]*x[3] - x[5]*x[3] - x[4]*x[3] - x[3]^2 + x[4]*x[2] - x
    [3]*x[2] + x[4]*x[1] - x[3]*x[1] + x[1],
x[6]^2*x[4] - x[6]*x[5]*x[4] + x[6]*x[4]^2 - x[5]*x[4]^2 + x[6]^2*
   x[3] - x[6]*x[5]*x[3] + x[6]*x[4]*x[3] - x[5]*x[4]*x[3] - x[6]*
   x[4] - x[5]*x[4] - x[4]^2 - x[4]*x[3] - x[4]*x[2] + x[3]*x[2] -
    x[4]*x[1] + x[3]*x[1] + x[2],
 - x[6]*x[4]^2*x[3] - x[4]^3*x[3] - x[6]*x[4]*x[3]^2 - x[4]^2*x
    [3]^2 + x[6]*x[4]*x[3]*x[2] + x[4]^2*x[3]*x[2] + x[6]*x[3]^2*x
    [2] + x[4]*x[3]^2*x[2] - x[6]*x[4]^2*x[1] - x[4]^3*x[1] - x
    [6]*x[4]*x[3]*x[1] - x[4]^2*x[3]*x[1] + x[6]*x[4]*x[2]*x[1] +
    x[4]^2*x[2]*x[1] + x[6]*x[3]*x[2]*x[1] + x[4]*x[3]*x[2]*x[1] +
     2*x[6]^2*x[5] + 2*x[6]*x[5]*x[4] + x[6]^2*x[3] + x[6]*x[4]*x
    [3] + x[6]^2*x[2] +  x[6]*x[4]*x[2] + x[6]*x[3]*x[2] + 2*x[6]*
    x[5]*x[1] + 2*x[5]*x[4]*x[1] + x[6]*x[3]*x[1] - x[5]*x[3]*x[1]
     - x[3]^2*x[1] + 2*x[6]*x[2]*x[1] + x[4]*x[2]*x[1] - x[3]*x
    [2]*x[1] - x[5]*x[1]^2 - x[4]*x[1]^2 - 2*x[3]*x[1]^2 - x[2]*x
    [1]^2 - x[1]^3 - x[6]*x[3] - x[4]*x[3] + x[3]^2 + x[6]*x[2] +
    x[4]*x[2] + x[3]*x[1],
 - x[6]*x[4]^3 - x[4]^4 - x[6]*x[4]^2*x[3] - x[4]^3*x[3] + x[6]*x
    [4]*x[2]^2 + x[4]^2*x[2]^2 + x[6]*x[3]*x[2]^2 + x[4]*x[3]*x
    [2]^2 + x[6]^3 + x[6]*x[5]^2 + x[6]^2*x[4] + 2*x[6]*x[5]*x[3]
    + x[6]*x[3]^2 + x[6]*x[4]*x[2] + x[6]*x[2]^2 + 2*x[6]^2*x[1] +
     x[5]^2*x[1] + 2*x[6]*x[4]*x[1] - x[5]*x[4]*x[1] - x[4]^2*x[1]
     + 2*x[5]*x[3]*x[1] - x[4]*x[3]*x[1] + x[3]^2*x[1] - x[5]*x
    [2]*x[1] - 2*x[4]*x[2]*x[1] - x[3]*x[2]*x[1] - x[2]^2*x[1] + x
    [6]*x[1]^2 - x[2]*x[1]^2 - x[5]*x[3] + x[4]*x[3] - x[3]^2 + x
    [5]*x[2] + 2*x[3]*x[2] - x[6] - x[4],
```

```
 - x[6]^2*x[4]^2 - x[6]*x[5]*x[4]^2 - x[6]*x[4]^3 - x[5]*x[4]^3 -
    x[6]^2*x[4]*x[3] - x[6]*x[5]*x[4]*x[3] - x[6]*x[4]^2*x[3] - x
    [5]*x[4]^2*x[3] + x[6]^2*x[4]*x[2] + x[6]*x[5]*x[4]*x[2] + x
    [6]*x[4]^2*x[2] + x[5]*x[4]^2*x[2] + x[6]^2*x[3]*x[2] + x[6]*x
    [5]*x[3]*x[2] + x[6]*x[4]*x[3]*x[2] + x[5]*x[4]*x[3]*x[2] + x
    [6]^2*x[4] + x[6]*x[4]^2 + x[6]^2*x[3] - x[4]^2*x[3] - x[6]*x
    [3]^2 - x[4]*x[3]^2 + x[6]^2*x[2] + 2*x[6]*x[5]*x[2] + x[6]*x
    [3]*x[2] - x[5]^2*x[1] + x[6]*x[4]*x[1] - x[5]*x[4]*x[1] + 2*x
    [4]^2*x[1] + 2*x[6]*x[3]*x[1] - x[5]*x[3]*x[1] + 2*x[4]*x[3]*x
    [1] - x[6]*x[2]*x[1] + x[3]*x[2]*x[1] - x[6]*x[1]^2 + x[3]*x
    [1]^2 + x[6]*x[3] + x[5]*x[3] - x[6]*x[2] - x[5]*x[2] - x[4]*x
    [2] - 2*x[3]*x[2] - x[2]^2 - x[3]*x[1] - x[2]*x[1] + x[4]
],
[
x[6],
x[5] + 1,
 - x[6]*x[4] - x[4]^2 + x[4]*x[3] - x[6]*x[2] - x[4]*x[2] + x[4]*x
    [1],
 - x[5]*x[4] + x[4]^2 - x[4]*x[3] - x[5]*x[2] + x[4]*x[2] - x[3]*x
    [2] - x[3] - x[1],
x[6]*x[4] + x[5]*x[4] - x[4]*x[2] - x[2]^2 - x[4]*x[1] - x[2]*x[1]
    + x[3]
],
[
x[6]^2 - x[5]^2 + x[6] + 1,
 - x[6]^2 + x[5]^2 + x[5],
x[6]*x[4]*x[3] + x[5]*x[4]*x[3] - x[6]*x[3]*x[2] - x[5]*x[3]*x[2]
   + x[6]*x[4]*x[1] + x[5]*x[4]*x[1] - x[6]*x[2]*x[1] - x[5]*x[2]*
   x[1] - x[5]*x[4] + x[4]*x[3] - x[5]*x[2] - x[4]*x[2] - x[2]^2 +
    x[4]*x[1] - x[3] - x[1],
x[6]*x[4]^2 + x[5]*x[4]^2 - x[6]*x[2]^2 - x[5]*x[2]^2 - x[6]*x[4]
   + x[4]^2 - x[6]*x[2] + x[4]*x[2] - x[4]*x[1] - x[2]*x[1],
x[6]^2*x[4] + 2*x[6]*x[5]*x[4] + x[5]^2*x[4] - x[6]^2*x[2] - 2*x
   [6]*x[5]*x[2] - x[5]^2*x[2] + x[6]*x[4] + x[5]*x[4] - x[4]^2 +
   x[6]*x[3] + x[5]*x[3] - x[4]*x[3] - x[4]*x[2] - x[3]*x[2] - x
   [6]*x[1] - x[5]*x[1] + x[3]
]
]);

mat22 := Matrix(Ground,[
[
 - x[6]*x[4] - x[5]*x[4] - x[6]*x[3] - x[5]*x[3] + x[4]*x[2] + x
    [3]*x[2] + x[4]*x[1] + x[3]*x[1] + x[2] + x[1],
x[5]*x[4] - x[4]^2 + x[6]*x[3] + 2*x[4]*x[3] - x[3]^2 - x[4]*x[2]
   - x[3]*x[1] - x[2],
```

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 - x[6]^3 - 2*x[6]^2*x[5] - x[6]*x[5]^2 + x[6]^2*x[4] + x[6]*x
    [4]^2 + x[6]^2*x[3] - x[6]*x[3]^2 + x[6]^2*x[2] + 2*x[6]*x[5]*
    x[2] - x[6]*x[4]*x[2] + x[6]*x[3]*x[2] - x[6]*x[2]^2 - x[5]^2*
    x[1] - 2*x[6]*x[4]*x[1] + x[5]*x[4]*x[1] - x[4]^2*x[1] + x[5]*
    x[3]*x[1] + x[3]^2*x[1] + x[6]*x[2]*x[1] + x[5]*x[2]*x[1] - 2*
    x[3]*x[2]*x[1] + 2*x[6]*x[1]^2 + x[5]*x[1]^2 + x[4]*x[1]^2 - x
    [3]*x[1]^2 - x[2]*x[1]^2 - x[1]^3 + x[6]*x[3] + x[5]*x[3] - x
    [4]*x[3] - x[3]^2 - x[6]*x[2] - x[5]*x[2] + x[2]^2 + x[2]*x[1]
     + x[6] + x[4],
x[6]^3 + x[6]*x[5]^2 - 2*x[6]*x[5]*x[4] - x[6]^2*x[3] + 2*x[6]*x
   [5]*x[3] - x[6]*x[4]*x[3] + x[6]*x[3]^2 - x[6]^2*x[2] - 2*x[6]*
   x[5]*x[2] + x[6]*x[4]*x[2] - x[6]*x[3]*x[2] + x[6]*x[2]^2 + 2*x
   [6]*x[5]*x[1] + x[6]*x[3]*x[1] - x[5]*x[3]*x[1] + x[4]*x[3]*x
   [1] - x[3]^2*x[1] - x[6]*x[2]*x[1] - x[5]*x[2]*x[1] + x[4]*x
   [2]*x[1] + x[2]^2*x[1] - x[6]*x[1]^2 - x[6]*x[3] + x[4]*x[3] +
   x[6]*x[2] + x[4]*x[2] - x[3]*x[1] - x[2]*x[1] - x[6]
],
[
 - x[4]^2 - 2*x[4]*x[3] - x[3]^2 + x[4]*x[2] + x[3]*x[2] + x[4]*x
    [1] + x[3]*x[1],
 - x[6]*x[4] + x[5]*x[4] + x[6]*x[3] - x[5]*x[3] + 2*x[4]*x[3] - x
    [3]*x[2] - x[4]*x[1] - x[2] + x[1],
 - 2*x[6]*x[5]*x[4] + x[6]*x[4]^2 - 2*x[6]*x[5]*x[3] + x[6]*x[4]*x
    [3] + 2*x[6]*x[5]*x[2] - x[6]*x[4]*x[2] + 2*x[6]*x[5]*x[1] -
    2*x[6]*x[4]*x[1] - x[6]*x[3]*x[1] + x[4]*x[3]*x[1] + x[3]^2*x
    [1] + x[6]*x[2]*x[1] + x[4]*x[2]*x[1] - x[2]^2*x[1] + x[6]*x
    [1]^2 - x[3]*x[1]^2 - x[2]*x[1]^2 - x[4]*x[3] - x[3]^2 - x[4]*
    x[2] + x[2]^2 + x[3]*x[1] + x[2]*x[1],
x[6]^3 - 2*x[6]^2*x[5] + x[6]*x[5]^2 + x[6]^2*x[4] - x[6]*x[4]^2 -
    x[6]^2*x[3] + 2*x[6]*x[5]*x[3] - x[6]*x[4]*x[3] + x[6]*x[3]^2
   - x[6]^2*x[2] - x[6]*x[3]*x[2] + x[6]*x[2]^2 - x[5]^2*x[1] + 2*
   x[6]*x[4]*x[1] + x[5]*x[4]*x[1] - x[4]^2*x[1] + x[6]*x[3]*x[1]
   - x[5]*x[3]*x[1] - x[5]*x[2]*x[1] - 2*x[3]*x[2]*x[1] + x[2]^2*x
   [1] - 2*x[6]*x[1]^2 + x[5]*x[1]^2 + x[4]*x[1]^2 + x[3]*x[1]^2 +
     x[2]*x[1]^2 - x[1]^3 - x[6]*x[3] + x[5]*x[3] + x[3]^2 + x[6]*
   x[2] - x[5]*x[2] + x[4]*x[2] - x[2]^2 - x[3]*x[1] - x[6] + x[4]
],
[ - x[6] - x[5] + 1,
x[6],
 - x[6]*x[4] - x[5]*x[4] - x[6]*x[2] - x[5]*x[2] + 2*x[4]*x[2] + x
    [3]*x[2] + x[4]*x[1] - x[3] - x[1],
x[5]*x[4] - x[4]^2 + x[4]*x[3] + x[6]*x[2] - 2*x[4]*x[2] - x[2]^2
   + x[2]*x[1] + x[3]
],
[
0,
x[6] - x[5] + 1,
 - x[4]^2 - x[4]*x[3] + 2*x[4]*x[2] + x[3]*x[2] - x[2]^2 + x[4]*x
    [1] - x[2]*x[1],
```

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 - x[6]*x[4] + x[5]*x[4] + x[4]*x[3] + x[6]*x[2] - x[5]*x[2] - x
    [3]*x[2] - x[4]*x[1] + x[2]*x[1] + x[3] - x[1]
]
]);


mat211 := Matrix(Ground,[
[x[5]*x[4]^2 - x[5]*x[3]^2 - x[5]*x[4]*x[2] + x[5]*x[3]*x[2] - x
   [5]*x[4]*x[1] + x[5]*x[3]*x[1] + x[6]*x[4] - x[5]*x[4] + x[4]^2
    - x[4]*x[3] - x[4]*x[2] + x[3]*x[2] + x[2],
x[6]*x[4]^2 - x[6]*x[3]^2 - x[6]*x[4]*x[2] + x[6]*x[3]*x[2] - x
   [6]*x[4]*x[1] + x[6]*x[3]*x[1] - x[4]^2 + x[6]*x[3] - x[5]*x[3]
    + x[4]*x[3] + x[4]*x[2] - x[3]*x[2] + x[1],
 - x[6]*x[4]^3 + x[5]*x[4]^3 + x[4]^4 - x[4]^3*x[3] + x[6]*x[4]*x
    [3]^2 - x[5]*x[4]*x[3]^2 - x[4]^2*x[3]^2 + x[4]*x[3]^3 - 2*x
    [4]^3*x[2] - x[6]*x[4]*x[3]*x[2] + x[5]*x[4]*x[3]*x[2] + 2*x
    [4]^2*x[3]*x[2] + x[6]*x[3]^2*x[2] - x[5]*x[3]^2*x[2] + x[6]*x
    [4]*x[2]^2 - x[5]*x[4]*x[2]^2 + x[4]^2*x[2]^2 - x[6]*x[3]*x
    [2]^2 + x[5]*x[3]*x[2]^2 - x[4]*x[3]*x[2]^2 + x[6]*x[4]^2*x[1]
     - x[5]*x[4]^2*x[1] - x[6]*x[4]*x[3]*x[1] + x[5]*x[4]*x[3]*x
    [1] + 2*x[4]^2*x[3]*x[1] - 2*x[4]*x[3]^2*x[1] + x[6]*x[4]*x
    [2]*x[1] - x[5]*x[4]*x[2]*x[1] - x[6]*x[3]*x[2]*x[1] + x[5]*x
    [3]*x[2]*x[1] - x[4]^2*x[1]^2 + x[4]*x[3]*x[1]^2 - x[6]^3 + 2*
   x[6]^2*x[5] - x[6]*x[5]^2 + x[6]*x[4]*x[3] + x[4]^2*x[3] - x
    [6]*x[3]^2 - x[3]^3 + x[6]*x[4]*x[2] - x[4]*x[3]*x[2] + x
    [3]^2*x[2] - x[6]*x[2]^2 - x[6]^2*x[1] + 2*x[6]*x[5]*x[1] - x
    [5]^2*x[1] - x[6]*x[4]*x[1] - x[5]*x[4]*x[1] + x[4]^2*x[1] + x
    [5]*x[3]*x[1] - 2*x[4]*x[3]*x[1] + x[3]^2*x[1] + x[5]*x[2]*x
    [1] - 2*x[4]*x[2]*x[1] + x[3]*x[2]*x[1] + x[2]^2*x[1] + x[6]*x
    [1]^2 - x[5]*x[1]^2 + x[4]*x[1]^2 - x[2]*x[1]^2 - x[6]*x[3] +
    x[5]*x[3] + x[4]*x[3] - x[3]^2 + x[6]*x[2] - x[5]*x[2] - x[3]*
    x[2] + x[3]*x[1] + x[6] + x[4],
x[6]*x[4]^3 - x[5]*x[4]^3 - x[4]^4 + x[4]^3*x[3] - x[6]*x[4]*x
   [3]^2 + x[5]*x[4]*x[3]^2 + x[4]^2*x[3]^2 - x[4]*x[3]^3 - x[6]*x
   [4]^2*x[2] + x[5]*x[4]^2*x[2] + x[4]^3*x[2] + x[6]*x[4]*x[3]*x
   [2] - x[5]*x[4]*x[3]*x[2] - 2*x[4]^2*x[3]*x[2] + x[4]*x[3]^2*x
   [2] + x[4]^2*x[2]^2 - x[3]^2*x[2]^2 - x[4]*x[2]^3 + x[3]*x[2]^3
    - x[6]*x[4]^2*x[1] + x[5]*x[4]^2*x[1] + x[6]*x[4]*x[3]*x[1] -
   x[5]*x[4]*x[3]*x[1] -  2*x[4]^2*x[3]*x[1] + 2*x[4]*x[3]^2*x[1]
   + x[4]^2*x[2]*x[1] - x[4]*x[3]*x[2]*x[1] - x[4]*x[2]^2*x[1] + x
   [3]*x[2]^2*x[1] + x[4]^2*x[1]^2 - x[4]*x[3]*x[1]^2 - x[6]^2*x
   [4] + 2*x[6]*x[5]*x[4] + x[6]^2*x[3] - x[6]*x[4]*x[3] - x[4]^2*
   x[3] + x[3]^3 + x[6]^2*x[2] - 2*x[6]*x[5]*x[2] + x[6]*x[3]*x[2]
    + x[4]*x[3]*x[2] - x[3]^2*x[2] - 2*x[6]*x[5]*x[1] + x[5]^2*x
   [1] - x[6]*x[4]*x[1] - x[6]*x[3]*x[1] - x[5]*x[3]*x[1] + 2*x
   [4]*x[3]*x[1] - x[3]^2*x[1] + x[6]*x[2]*x[1] - x[3]*x[2]*x[1] +
    x[6]*x[1]^2 + x[5]*x[1]^2 + x[3]*x[1]^2 - x[1]^3 + x[6]*x[3] -
    x[5]*x[3] - x[4]*x[3] + x[3]^2 - x[6]*x[2] + x[5]*x[2] - x[4]*
   x[2] + x[3]*x[2] + x[2]^2 - x[3]*x[1] - x[4],
```

```
 - x[6]*x[4]^3 + x[5]*x[4]^3 + x[4]^4 - x[4]^3*x[3] + x[6]*x[4]*x
    [3]^2 - x[5]*x[4]*x[3]^2 - x[4]^2*x[3]^2 + x[4]*x[3]^3 + x[6]*
    x[4]^2*x[2] - x[5]*x[4]^2*x[2] - 2*x[4]^3*x[2] - x[6]*x[4]*x
    [3]*x[2] + x[5]*x[4]*x[3]*x[2] + x[4]^2*x[3]*x[2] + x[3]^3*x
    [2] + x[4]^2*x[2]^2 - x[3]^2*x[2]^2 + x[6]*x[4]^2*x[1] - x[5]*
    x[4]^2*x[1] - x[6]*x[4]*x[3]*x[1] + x[5]*x[4]*x[3]*x[1] + 2*x
    [4]^2*x[3]*x[1] - 2*x[4]*x[3]^2*x[1] + x[4]^2*x[2]*x[1] + x
    [4]*x[3]*x[2]*x[1] - 2*x[3]^2*x[2]*x[1] - x[4]*x[2]^2*x[1] + x
    [3]*x[2]^2*x[1] - x[4]^2*x[1]^2 + x[4]*x[3]*x[1]^2 - x[4]*x
    [2]*x[1]^2 + x[3]*x[2]*x[1]^2 + x[6]^2*x[4] - x[6]*x[4]^2 - x
    [6]^2*x[3] + 2*x[6]*x[5]*x[3] + x[4]^2*x[3] - x[3]^3 - x[6]^2*
    x[2] + x[6]*x[4]*x[2] - x[6]*x[3]*x[2] - x[4]*x[3]*x[2] + x
    [3]^2*x[2] - x[5]^2*x[1] - x[5]*x[4]*x[1] + x[4]^2*x[1] - x
    [6]*x[3]*x[1] - x[4]*x[3]*x[1] + x[3]^2*x[1] + x[6]*x[2]*x[1]
    + x[5]*x[2]*x[1] - x[4]*x[2]*x[1] + x[3]*x[2]*x[1] + x[6]*x
    [1]^2 - x[2]*x[1]^2 - x[6]*x[3] + x[5]*x[3] + x[4]*x[3] - x
    [3]^2 + x[6]*x[2] - x[5]*x[2] - 2*x[3]*x[2] + x[3]*x[1] + x
    [2]*x[1] + x[4]
],
[
x[6]*x[3] - x[5]*x[3] - x[4]*x[3] + x[3]^2 + x[3]*x[2] - x[3]*x[1]
    + x[1],
x[6]*x[4] - x[5]*x[4] - x[4]^2 + x[4]*x[3] + x[4]*x[2] - x[4]*x[1]
    + x[2],
 - x[6]^3 + 2*x[6]^2*x[5] - x[6]*x[5]^2 + 2*x[6]^2*x[4] - 2*x[6]*x
    [5]*x[4] - x[6]*x[4]^2 - 2*x[6]^2*x[3] + 2*x[6]*x[5]*x[3] + 2*
    x[6]*x[4]*x[3] - x[6]*x[3]^2 - 2*x[6]^2*x[2] + 2*x[6]*x[5]*x
    [2] + 2*x[6]*x[4]*x[2] - 2*x[6]*x[3]*x[2] - x[6]*x[2]^2 + x
    [6]^2*x[1] - x[5]^2*x[1] - x[6]*x[4]*x[1] - x[5]*x[4]*x[1] + x
    [6]*x[3]*x[1] + x[5]*x[3]*x[1] + x[6]*x[2]*x[1] + x[5]*x[2]*x
    [1] - x[5]*x[1]^2 - x[6]*x[3] + x[5]*x[3] + x[6]*x[2] - x[5]*x
    [2] - x[4]*x[2] + x[3]*x[2] + x[2]^2 - x[2]*x[1] + x[6] + x
    [4], x[6]^3 - 2*x[6]^2*x[5] + x[6]*x[5]^2 - 2*x[6]^2*x[4] + 2*
    x[6]*x[5]*x[4] + x[6]*x[4]^2 + 2*x[6]^2*x[3] - 2*x[6]*x[5]*x
    [3] - 2*x[6]*x[4]*x[3] + x[6]*x[3]^2 + 2*x[6]^2*x[2] - 2*x[6]*
    x[5]*x[2] - 2*x[6]*x[4]*x[2] + 2*x[6]*x[3]*x[2] + x[6]*x[2]^2
    - 2*x[6]^2*x[1] + 2*x[6]*x[5]*x[1] + x[6]*x[4]*x[1] + x[5]*x
    [4]*x[1] + x[4]^2*x[1] - 2*x[6]*x[3]*x[1] - x[4]*x[3]*x[1] - x
    [6]*x[2]*x[1] - x[5]*x[2]*x[1] - 2*x[4]*x[2]*x[1] + x[3]*x[2]*
    x[1] + x[2]^2*x[1] + x[6]*x[1]^2 + x[4]*x[1]^2 - x[2]*x[1]^2 -
     x[4]*x[3] + x[3]*x[2] - x[6],
 - x[6]^3 + 2*x[6]^2*x[5] - x[6]*x[5]^2 + 2*x[6]^2*x[4] - 2*x[6]*x
    [5]*x[4] - x[6]*x[4]^2 - 2*x[6]^2*x[3] + 2*x[6]*x[5]*x[3] + 2*
    x[6]*x[4]*x[3] - x[6]*x[3]^2 - 2*x[6]^2*x[2] + 2*x[6]*x[5]*x
    [2] + 2*x[6]*x[4]*x[2] - 2*x[6]*x[3]*x[2] - x[6]*x[2]^2 + 2*x
    [6]^2*x[1] - 2*x[6]*x[5]*x[1] - 2*x[6]*x[4]*x[1] + x[6]*x[3]*x
    [1] + x[5]*x[3]*x[1] + x[4]*x[3]*x[1] - x[3]^2*x[1] +  2*x[6]*
    x[2]*x[1] - x[3]*x[2]*x[1] - x[5]*x[1]^2 - x[4]*x[1]^2 + 2*x
    [3]*x[1]^2 + x[2]*x[1]^2 - x[1]^3 - x[3]^2 + x[3]*x[1] + x[6]
```

```
],
[
x[6]*x[5] - x[5]^2 + 1,
x[6]^2 - x[6]*x[5],
 - x[6]^2*x[4] + 2*x[6]*x[5]*x[4] - x[5]^2*x[4] + x[6]*x[4]^2 - x
    [5]*x[4]^2 - x[6]*x[4]*x[3] + x[5]*x[4]*x[3] - x[6]^2*x[2] +
    2*x[6]*x[5]*x[2] - x[5]^2*x[2] - x[6]*x[4]*x[2] + x[5]*x[4]*x
    [2] + x[6]*x[4]*x[1] - x[5]*x[4]*x[1] + x[4]^2 + x[6]*x[3] - x
    [5]*x[3] - x[4]*x[3] - x[4]*x[2] + x[3]*x[2] + x[6]*x[1] - x
    [5]*x[1],
x[6]^2*x[4] - 2*x[6]*x[5]*x[4] + x[5]^2*x[4] - x[6]*x[4]^2 + x[5]*
   x[4]^2 + x[6]*x[4]*x[3] - x[5]*x[4]*x[3] + x[6]*x[2]^2 - x[5]*x
   [2]^2 - x[6]*x[4]*x[1] + x[5]*x[4]*x[1] + x[6]*x[4] - x[6]*x[3]
    + x[5]*x[3] - x[6]*x[2] - x[4]*x[1] + x[2]*x[1], -
x[6]^2*x[4] + 2*x[6]*x[5]*x[4] - x[5]^2*x[4] + x[6]*x[4]^2 - x[5]*
   x[4]^2 - x[6]*x[4]*x[3] + x[5]*x[4]*x[3] - x[6]*x[4]*x[2] + x
   [5]*x[4]*x[2] - x[6]*x[3]*x[2] + x[5]*x[3]*x[2] + x[6]*x[4]*x
   [1] - x[5]*x[4]*x[1] + x[6]*x[2]*x[1] - x[5]*x[2]*x[1] + x[5]*x
   [4] + x[6]*x[3] - x[5]*x[3] - x[5]*x[2] - x[4]*x[2] + x[2]^2 +
   x[3] - x[1]
],
[
x[6]*x[5]*x[4] + x[5]^2*x[4] - x[6]*x[5]*x[3] - x[5]^2*x[3] - x
   [5]*x[4]*x[2] + x[5]*x[3]*x[2] - x[5]*x[4]*x[1] + x[5]*x[3]*x
   [1] + x[6]*x[4] + x[4]^2 - x[6]*x[3] - x[4]*x[3] - x[5]*x[2] +
   x[5]*x[1] - x[4]*x[1] + x[3]*x[1],
x[6]^2*x[4] + x[6]*x[5]*x[4] - x[6]^2*x[3] - x[6]*x[5]*x[3] - x
   [6]*x[4]*x[2] + x[6]*x[3]*x[2] - x[6]*x[4]*x[1] + x[6]*x[3]*x
   [1] - x[6]*x[4] + x[6]*x[3] + x[4]*x[3] - x[3]^2 - x[6]*x[2] +
   x[6]*x[1] + x[4]*x[1] - x[3]*x[1],
```

```
 - x[6]^2*x[4]^2 + x[5]^2*x[4]^2 + x[6]*x[4]^3 + x[5]*x[4]^3 + x
    [6]^2*x[4]*x[3] - x[5]^2*x[4]*x[3] - 2*x[6]*x[4]^2*x[3] - 2*x
    [5]*x[4]^2*x[3] + x[6]*x[4]*x[3]^2 + x[5]*x[4]*x[3]^2 - x
    [6]^2*x[4]*x[2] + x[5]^2*x[4]*x[2] - 2*x[5]*x[4]^2*x[2] - x
    [4]^3*x[2] + x[6]^2*x[3]*x[2] - x[5]^2*x[3]*x[2] + 2*x[5]*x
    [4]*x[3]*x[2] + 2*x[4]^2*x[3]*x[2] - x[4]*x[3]^2*x[2] +  x[6]*
    x[4]*x[2]^2 - x[5]*x[4]*x[2]^2 + x[4]^2*x[2]^2 - x[6]*x[3]*x
    [2]^2 + x[5]*x[3]*x[2]^2 - x[4]*x[3]*x[2]^2 + 2*x[6]*x[4]^2*x
    [1] - x[4]^3*x[1] - 2*x[6]*x[4]*x[3]*x[1] + 2*x[4]^2*x[3]*x[1]
     - x[4]*x[3]^2*x[1] + x[6]*x[4]*x[2]*x[1] - x[5]*x[4]*x[2]*x
    [1] - x[6]*x[3]*x[2]*x[1] + x[5]*x[3]*x[2]*x[1] - x[4]^2*x
    [1]^2 + x[4]*x[3]*x[1]^2 - x[6]^2*x[4] + 2*x[6]*x[5]*x[4] + x
    [6]^2*x[3] -  2*x[6]*x[5]*x[3] + x[6]*x[4]*x[3] + x[5]*x[4]*x
    [3] - x[6]*x[3]^2 - x[5]*x[3]^2 + x[6]^2*x[2] - x[5]*x[4]*x[2]
     - x[4]^2*x[2] + x[6]*x[3]*x[2] + x[3]^2*x[2] + x[6]*x[2]^2 -
    x[5]*x[2]^2 + x[4]*x[2]^2 - x[6]^2*x[1] - x[6]*x[4]*x[1] + 2*x
    [5]*x[4]*x[1] + 2*x[4]^2*x[1] - x[5]*x[3]*x[1] - 4*x[4]*x[3]*x
    [1] + 2*x[3]^2*x[1] - 3*x[6]*x[2]*x[1] + x[5]*x[2]*x[1] - 3*x
    [4]*x[2]*x[1] + x[3]*x[2]*x[1] +  2*x[6]*x[1]^2 + x[4]*x[1]^2
    + x[2]*x[1]^2 - x[1]^3 + x[4]*x[3] - x[3]^2 + x[4]*x[2] - 2*x
    [3]*x[2] + x[3]*x[1] - x[2]*x[1] + x[1]^2,
x[6]^2*x[4]^2 - x[5]^2*x[4]^2 - x[6]*x[4]^3 - x[5]*x[4]^3 - x
   [6]^2*x[4]*x[3] + x[5]^2*x[4]*x[3] + 2*x[6]*x[4]^2*x[3] + 2*x
   [5]*x[4]^2*x[3] - x[6]*x[4]*x[3]^2 - x[5]*x[4]*x[3]^2 - x[6]*x
   [4]^2*x[2] + x[5]*x[4]^2*x[2] + x[4]^3*x[2] + x[6]*x[4]*x[3]*x
   [2] - x[5]*x[4]*x[3]*x[2] - 2*x[4]^2*x[3]*x[2] + x[4]*x[3]^2*x
   [2] + x[6]*x[4]*x[2]^2 + x[5]*x[4]*x[2]^2 - x[6]*x[3]*x[2]^2 -
   x[5]*x[3]*x[2]^2 - x[4]*x[2]^3 + x[3]*x[2]^3 - 2*x[6]*x[4]^2*x
   [1] + x[4]^3*x[1] + 2*x[6]*x[4]*x[3]*x[1] - 2*x[4]^2*x[3]*x[1]
   + x[4]*x[3]^2*x[1] + x[4]^2*x[2]*x[1] - x[4]*x[3]*x[2]*x[1] - x
   [4]*x[2]^2*x[1] + x[3]*x[2]^2*x[1] + x[4]^2*x[1]^2 - x[4]*x[3]*
   x[1]^2 + 2*x[6]^2*x[5] - x[6]*x[4]^2 - x[6]^2*x[3] - x[5]*x[4]*
   x[3] + x[6]*x[3]^2 + x[5]*x[3]^2 - x[6]^2*x[2] +  x[5]*x[4]*x
   [2] + x[4]^2*x[2] - x[6]*x[3]*x[2] - x[3]^2*x[2] - x[2]^3 - 4*x
   [6]*x[5]*x[1] + 2*x[6]*x[4]*x[1] - 2*x[5]*x[4]*x[1] - 2*x[4]^2*
   x[1] + x[6]*x[3]*x[1] + x[5]*x[3]*x[1] + 4*x[4]*x[3]*x[1] - 2*x
   [3]^2*x[1] + 2*x[6]*x[2]*x[1] + 2*x[4]*x[2]*x[1] - x[3]*x[2]*x
   [1] + x[2]^2*x[1] + 2*x[5]*x[1]^2 - 2*x[4]*x[1]^2 - x[2]*x[1]^2
    + x[6]*x[3] - x[6]*x[2] - x[4]*x[2] + 2*x[3]*x[2] -  2*x[3]*x
   [1] + x[2]*x[1],
```

```
 - x[6]^2*x[4]^2 + x[5]^2*x[4]^2 + x[6]*x[4]^3 + x[5]*x[4]^3 + x
    [6]^2*x[4]*x[3] - x[5]^2*x[4]*x[3] - 2*x[6]*x[4]^2*x[3] - 2*x
    [5]*x[4]^2*x[3] + x[6]*x[4]*x[3]^2 + x[5]*x[4]*x[3]^2 - 2*x
    [5]*x[4]^2*x[2] - x[4]^3*x[2] - x[6]*x[4]*x[3]*x[2] + x[5]*x
    [4]*x[3]*x[2] + 2*x[4]^2*x[3]*x[2] + x[6]*x[3]^2*x[2] + x[5]*x
    [3]^2*x[2] - x[4]*x[3]^2*x[2] + x[4]^2*x[2]^2 - x[3]^2*x[2]^2
    + 2*x[6]*x[4]^2*x[1] - x[4]^3*x[1] - 2*x[6]*x[4]*x[3]*x[1] +
    2*x[4]^2*x[3]*x[1] - x[4]*x[3]^2*x[1] + x[6]*x[4]*x[2]*x[1] +
    x[5]*x[4]*x[2]*x[1] - x[6]*x[3]*x[2]*x[1] - x[5]*x[3]*x[2]*x
    [1] + x[4]*x[3]*x[2]*x[1] - x[3]^2*x[2]*x[1] - x[4]*x[2]^2*x
    [1] + x[3]*x[2]^2*x[1] - x[4]^2*x[1]^2 + x[4]*x[3]*x[1]^2 - x
    [4]*x[2]*x[1]^2 + x[3]*x[2]*x[1]^2 + x[6]^3 + x[6]*x[5]^2 - x
    [6]^2*x[4] + x[5]*x[4]*x[3] - x[5]*x[3]^2 - 2*x[6]*x[5]*x[2] +
     x[6]*x[4]*x[2] - x[5]*x[4]*x[2] - x[4]^2*x[2] + x[3]^2*x[2] +
     x[6]*x[2]^2 + x[4]*x[2]^2 + x[3]*x[2]^2 - 2*x[6]^2*x[1] - x
    [5]^2*x[1] + x[6]*x[4]*x[1] + 2*x[5]*x[4]*x[1] + 2*x[4]^2*x[1]
     - x[5]*x[3]*x[1] - 4*x[4]*x[3]*x[1] + 2*x[3]^2*x[1] + 2*x[5]*
    x[2]*x[1] - 3*x[4]*x[2]*x[1] - 2*x[2]^2*x[1] + x[6]*x[1]^2 + x
    [4]*x[1]^2 - x[3]*x[1]^2 + x[2]*x[1]^2 + x[5]*x[3] - x[5]*x[2]
     + x[4]*x[2] - 3*x[3]*x[2] + x[2]^2 + x[3]*x[1] - x[6] + x[4]
],
[
x[6]*x[5] - x[5]^2 + x[6] - x[5],
x[6]^2 - x[6]*x[5] - x[6] + x[5] + 1,
 - x[6]^2*x[4] + 2*x[6]*x[5]*x[4] - x[5]^2*x[4] + x[6]*x[4]^2 - x
    [5]*x[4]^2 - x[6]*x[4]*x[3] + x[5]*x[4]*x[3] - x[6]^2*x[2] +
    2*x[6]*x[5]*x[2] - x[5]^2*x[2] - x[6]*x[4]*x[2] + x[5]*x[4]*x
    [2] + x[6]*x[4]*x[1] - x[5]*x[4]*x[1] + x[6]*x[3] - x[5]*x[3]
    + x[4]*x[2] - x[2]^2 + x[6]*x[1] - x[5]*x[1] - x[4]*x[1] + x
    [2]*x[1],
x[6]^2*x[4] - 2*x[6]*x[5]*x[4] + x[5]^2*x[4] - x[6]*x[4]^2 + x[5]*
   x[4]^2 + x[6]*x[4]*x[3] - x[5]*x[4]*x[3] + x[6]*x[2]^2 - x[5]*x
   [2]^2 - x[6]*x[4]*x[1] + x[5]*x[4]*x[1] + x[5]*x[4] - x[6]*x[3]
    + x[5]*x[3] - x[4]*x[3] - x[5]*x[2] + x[3]*x[2] + x[3] - x[1],
 - x[6]^2*x[4] + 2*x[6]*x[5]*x[4] - x[5]^2*x[4] + x[6]*x[4]^2 - x
    [5]*x[4]^2 - x[6]*x[4]*x[3] + x[5]*x[4]*x[3] - x[6]*x[4]*x[2]
    + x[5]*x[4]*x[2] - x[6]*x[3]*x[2] + x[5]*x[3]*x[2] + x[6]*x
    [4]*x[1] - x[5]*x[4]*x[1] + x[6]*x[2]*x[1] - x[5]*x[2]*x[1] +
    x[6]*x[4] - x[4]^2 + x[6]*x[3] - x[5]*x[3] - x[6]*x[2] + x[4]*
    x[2]
]
]);

mat1111 := Matrix(Ground,[
[
 - x[6]*x[4] + x[5]*x[4] + x[4]^2 + x[6]*x[3] - x[5]*x[3] - 2*x
    [4]*x[3] + x[3]^2 - x[4]*x[2] + x[3]*x[2] + x[4]*x[1] - x[3]*x
    [1] - x[2] + x[1],
```

```
x[6]^3 - 2*x[6]^2*x[5] + x[6]*x[5]^2 - 2*x[6]^2*x[4] + 2*x[6]*x
   [5]*x[4] + x[6]*x[4]^2 + 2*x[6]^2*x[3] - 2*x[6]*x[5]*x[3] - 2*x
   [6]*x[4]*x[3] + x[6]*x[3]^2 + 2*x[6]^2*x[2] - 2*x[6]*x[5]*x[2]
   - 2*x[6]*x[4]*x[2] + 2*x[6]*x[3]*x[2] + x[6]*x[2]^2 - 3*x[6]^2*
   x[1] + 4*x[6]*x[5]*x[1] - x[5]^2*x[1] + 4*x[6]*x[4]*x[1] - 2*x
   [5]*x[4]*x[1] - x[4]^2*x[1] - 4*x[6]*x[3]*x[1] +  2*x[5]*x[3]*x
   [1] + 2*x[4]*x[3]*x[1] - x[3]^2*x[1] - 4*x[6]*x[2]*x[1] + 2*x
   [5]*x[2]*x[1] + 2*x[4]*x[2]*x[1] - 2*x[3]*x[2]*x[1] - x[2]^2*x
   [1] + 3*x[6]*x[1]^2 - 2*x[5]*x[1]^2 - 2*x[4]*x[1]^2 + 2*x[3]*x
   [1]^2 + 2*x[2]*x[1]^2 - x[1]^3 - x[6]*x[3] + x[5]*x[3] + x[4]*x
   [3] - x[3]^2 + x[6]*x[2] - x[5]*x[2] - x[4]*x[2] + x[2]^2 + x
   [3]*x[1] - x[2]*x[1] - x[6] + x[4]
],
[
x[6] - x[5] + 1,
 - x[6]*x[4] + x[5]*x[4] + x[4]^2 - x[4]*x[3] + x[6]*x[2] - x[5]*x
    [2] - 2*x[4]*x[2] + x[3]*x[2] + x[2]^2 + x[4]*x[1] - x[2]*x[1]
     + x[3] - x[1]
]
]);

Minor4 := Minors(mat4,2);
Minor31 := Minors(mat31,3);
Minor22 := Minors(mat22,3);
Minor211 := Minors(mat211,3);
Minor1111 := Minors(mat1111,2);

LMinor4 := Minors(mat4,1);
LMinor31 := Minors(mat31,2);
LMinor22 := Minors(mat22,2);
LMinor211 := Minors(mat211,2);
LMinor1111 := Minors(mat1111,1);

Upper4 := Ideal(Minor4);
Upper31 := Ideal(Minor31);
Upper22 := Ideal(Minor22);
Upper211 := Ideal(Minor211);
Upper1111 := Ideal(Minor1111);

Lower4 := Ideal(LMinor4);
Lower31 := Ideal(LMinor31);
Lower22 := Ideal(LMinor22);
Lower211 := Ideal(LMinor211);
Lower1111 := Ideal(LMinor1111);
```

Due to the limitations on the size of the output of the Magma online calculator, we then executed the commands

```
RadicalDecomposition(Upper4 + Upper31 + Upper22 + Upper211 +
   Upper1111);
```

```
RadicalDecomposition(Lower4 + Upper31 + Upper22 + Upper211 +
   Upper1111);
RadicalDecomposition(Upper4 + Lower31 + Upper22 + Upper211 +
   Upper1111);
RadicalDecomposition(Upper4 + Upper31 + Lower22 + Upper211 +
   Upper1111);
RadicalDecomposition(Upper4 + Upper31 + Upper22 + Lower211 +
   Upper1111);
RadicalDecomposition(Upper4 + Upper31 + Upper22 + Upper211 +
   Lower1111);
```

one by one, as otherwise the output gets truncated. This produces the results presented in the Appendix of [1].

REFERENCES

[1] Murray Bremner and Vladimir Dotsenko, *Classification of regular parametrized one - relation operads*, 2015.