

Cicy data for heterotic line bundle models

Cicy: {{6784, 4, 3}}

■ Cicy 6784, Symmetry 3

$$X = \begin{pmatrix} 1 & 1 & 0 \\ 0 & 0 & 2 \\ 2 & 0 & 0 \\ 1 & 1 & 2 \end{pmatrix}$$

$$\eta(X) = -64 \quad h^{1,1}(X) = 4 \quad h^{2,1}(X) = 36 \quad c_2(TX) = (24, 24, 24, 40)$$

$$\kappa = 12t_1 t_2 t_3 + 24t_1 t_2 t_4 + 12t_1 t_3 t_4 + 24t_2 t_3 t_4 + 12t_1 t_4^2 + 12t_2 t_4^2 + 12t_3 t_4^2 + 4t_4^3$$

symmetry: 3 order: 4

Abelian: True block diagonal: True factors: [2, 2]

$$\text{Action on coordinates: } \left\{ \begin{pmatrix} 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -1 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & -1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 \end{pmatrix} \right\}$$

$$\text{Action on polynomials: } \left\{ \begin{pmatrix} -1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix}, \begin{pmatrix} -1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \right\}$$

Cicy: {{6828, 4, 2}}

■ Cicy 6828, Symmetry 2

$$X = \begin{pmatrix} 0 & 0 & 2 \\ 1 & 1 & 0 \\ 1 & 1 & 0 \\ 1 & 1 & 2 \end{pmatrix}$$

$$\eta(X) = -64 \quad h^{1,1}(X) = 4 \quad h^{2,1}(X) = 36 \quad c_2(TX) = (24, 24, 24, 40)$$

$$\kappa = 12t_1 t_2 t_3 + 24t_1 t_2 t_4 + 24t_1 t_3 t_4 + 12t_2 t_3 t_4 + 12t_1 t_4^2 + 12t_2 t_4^2 + 12t_3 t_4^2 + 4t_4^3$$

symmetry: 2 order: 4

Abelian: True block diagonal: True factors: [2, 2]

$$\text{Action on coordinates: } \left\{ \begin{pmatrix} 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -1 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & -1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 \end{pmatrix} \right\}$$

$$\text{Action on polynomials: } \left\{ \begin{pmatrix} 1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 \\ 1 & 0 & 0 \\ 0 & 0 & 1 \end{pmatrix} \right\}$$

Cicy: {{7435, 4, 2}}

■ Cicy 7435, Symmetry 2

$$X = \begin{pmatrix} 1 & 1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 1 & 0 \\ 1 & 1 & 1 & 1 & 1 & 1 & 2 \end{pmatrix}$$

$$\eta(X) = -80 \quad h^{-1}(X) = 4 \quad h^{2,1}(X) = 44 \quad c_2(TX) = \{24, 24, 24, 64\}$$

$$\kappa = 12t_1 t_2 t_3 + 24t_1 t_2 t_4 + 24t_1 t_3 t_4 + 24t_2 t_3 t_4 + 24t_1 t_4^2 + 24t_2 t_4^2 + 24t_3 t_4^2 + 16t_4^3$$

symmetry: 2 order: 4

Abelian: True block diagonal: True factors: {2, 2}

$$\text{Action on coordinates: } \left\{ \begin{pmatrix} 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix} \right\}$$

$$\text{Action on polynomials: } \left\{ \begin{pmatrix} 1 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & -1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & -1 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 1 \end{pmatrix} \right\}$$

Cicy: {{7862, 4, 5}}

■ Cicy 7862, Symmetry 5

$$X = \begin{pmatrix} 2 \\ 2 \\ 2 \\ 2 \end{pmatrix}$$

$$\eta(X) = -128 \quad h^{-1}(X) = 4 \quad h^{2,1}(X) = 68 \quad c_2(TX) = \{24, 24, 24, 24\}$$

$$\kappa = 12t_1 t_2 t_3 + 12t_1 t_2 t_4 + 12t_1 t_3 t_4 + 12t_2 t_3 t_4$$

symmetry: 5 order: 4

Abelian: True block diagonal: True factors: {2, 2}

$$\text{Action on coordinates: } \left\{ \begin{pmatrix} 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & -1 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & -1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1 \end{pmatrix} \right\}$$

Action on polynomials: {{1}, {1}}

Cicy: {{5256, 2, 1}}

■ Cicy 5256, Symmetry 1

$$X = \begin{pmatrix} 1 & 1 & 0 & 0 \\ 2 & 0 & 0 & 0 \\ 0 & 0 & 1 & 1 \\ 0 & 0 & 1 & 1 \\ 1 & 1 & 1 & 1 \end{pmatrix}$$

$$\eta(X) = -48 \quad h^{-1}(X) = 5 \quad h^{2,1}(X) = 29 \quad c_2(TX) = \{24, 24, 24, 40\}$$

$$\kappa = 12t_1 t_2 t_3 + 12t_1 t_2 t_4 + 12t_1 t_3 t_4 + 12t_2 t_3 t_4 + 12t_1 t_2 t_5 + 24t_1 t_3 t_5 + 24t_2 t_3 t_5 + 24t_1 t_4 t_5 + 24t_2 t_4 t_5 + 12t_3 t_4 t_5 + 12t_1 t_5^2 + 12t_2 t_5^2 + 12t_3 t_5^2 + 12t_4 t_5^2 + 4t_5^3$$

symmetry: 1 order: 2

Abelian: True block diagonal: True factors: {2}

$$\text{Action on coordinates: } \left\{ \begin{pmatrix} -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -1 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 \end{pmatrix} \right\}$$

$$\text{Action on polynomials: } \left\{ \begin{pmatrix} -1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & -1 & 0 \\ 0 & 0 & 0 & 1 \end{pmatrix} \right\}$$

Cicy: {{6890, 2, 1}}

■ Cicy 6890, Symmetry 1

$$X = \begin{pmatrix} 1 & 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 1 & 0 \\ 0 & 0 & 0 & 0 & 2 \\ 0 & 0 & 2 & 0 & 0 \\ 1 & 1 & 1 & 1 & 1 \end{pmatrix}$$

$$\eta(X) = -64 \quad h^{-1}(X) = 5 \quad h^{2^{-1}}(X) = 37 \quad c_2(TX) = \{24, 24, 24, 24, 56\}$$

$$\kappa = 12 t_1 t_2 t_3 + 12 t_1 t_2 t_4 + 12 t_1 t_3 t_4 + 12 t_2 t_3 t_4 + 24 t_1 t_2 t_5 + 12 t_1 t_3 t_5 + 24 t_2 t_3 t_5 + 24 t_1 t_4 t_5 + 24 t_2 t_4 t_5 + 24 t_3 t_4 t_5 + 12 t_1 t_5^2 + 24 t_2 t_5^2 + 12 t_3 t_5^2 + 24 t_4 t_5^2 + 8 t_5^3$$

symmetry: 1 order: 2

Abelian: True block diagonal: True factors: [2]

$$\text{Action on coordinates: } \left\{ \begin{pmatrix} -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -1 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 \end{pmatrix} \right\}$$

$$\text{Action on polynomials: } \left\{ \begin{pmatrix} -1 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & -1 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & -1 \end{pmatrix} \right\}$$

Cicy: {{6732, 2, 2}}

■ Cicy 6732, Symmetry 2

$$X = \begin{pmatrix} 1 & 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 1 \\ 0 & 0 & 0 & 0 & 2 & 0 \\ 1 & 1 & 1 & 1 & 1 & 1 \end{pmatrix}$$

$$\eta(X) = -64 \quad h^{-1}(X) = 5 \quad h^{2^{-1}}(X) = 37 \quad c_2(TX) = \{24, 24, 24, 24, 56\}$$

$$\kappa = 12 t_1 t_2 t_3 + 12 t_1 t_2 t_4 + 12 t_1 t_3 t_4 + 12 t_2 t_3 t_4 + 12 t_1 t_2 t_5 + 24 t_1 t_3 t_5 + 24 t_2 t_3 t_5 + 24 t_1 t_4 t_5 + 24 t_2 t_4 t_5 + 24 t_3 t_4 t_5 + 12 t_1 t_5^2 + 12 t_2 t_5^2 + 24 t_3 t_5^2 + 24 t_4 t_5^2 + 8 t_5^3$$

symmetry: 2 order: 2

Abelian: True block diagonal: True factors: [2]

$$\text{Action on coordinates: } \left\{ \begin{pmatrix} -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -1 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 \end{pmatrix} \right\}$$

$$\text{Action on polynomials: } \left\{ \begin{pmatrix} -1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & -1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 0 & -1 \end{pmatrix} \right\}$$

Cicy: {{6890, 2, 2}}

■ Cicy 6890, Symmetry 2

$$X = \begin{pmatrix} 1 & 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 1 & 0 \\ 0 & 0 & 0 & 0 & 2 \\ 0 & 0 & 2 & 0 & 0 \\ 1 & 1 & 1 & 1 & 1 \end{pmatrix}$$

$$\eta(X) = -64 \quad h^{-1}(X) = 5 \quad h^{2^1}(X) = 37 \quad c_2(TX) = \{24, 24, 24, 24, 56\}$$

$$\kappa = 12 t_1 t_2 t_3 + 12 t_1 t_2 t_4 + 12 t_1 t_3 t_4 + 12 t_2 t_3 t_4 + 24 t_1 t_2 t_5 + 12 t_1 t_3 t_5 + 24 t_2 t_3 t_5 + 24 t_1 t_4 t_5 + 24 t_2 t_4 t_5 + 24 t_3 t_4 t_5 + 12 t_1 t_5^2 + 24 t_2 t_5^2 + 12 t_3 t_5^2 + 24 t_4 t_5^2 + 8 t_5^3$$

symmetry: 2 order: 2

Abelian: True block diagonal: True factors: [2]

$$\text{Action on coordinates: } \left\{ \begin{pmatrix} -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -1 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 \end{pmatrix} \right\}$$

$$\text{Action on polynomials: } \left\{ \begin{pmatrix} -1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & -1 \\ 0 & 0 & 0 & -1 \end{pmatrix} \right\}$$

Cicy: {{6777, 2, 1}}

■ Cicy 6777, Symmetry 1

$$X = \begin{pmatrix} 1 & 1 & 0 & 0 \\ 0 & 0 & 0 & 2 \\ 0 & 0 & 2 & 0 \\ 2 & 0 & 0 & 0 \\ 1 & 1 & 1 & 1 \end{pmatrix}$$

$$\eta(X) = -64 \quad h^{-1}(X) = 5 \quad h^{2^1}(X) = 37 \quad c_2(TX) = \{24, 24, 24, 24, 56\}$$

$$\kappa = 12 t_1 t_2 t_3 + 12 t_1 t_2 t_4 + 12 t_1 t_3 t_4 + 12 t_2 t_3 t_4 + 24 t_1 t_2 t_5 + 24 t_1 t_3 t_5 + 12 t_2 t_3 t_5 + 24 t_1 t_4 t_5 + 24 t_2 t_4 t_5 + 24 t_3 t_4 t_5 + 24 t_1 t_5^2 + 12 t_2 t_5^2 + 12 t_3 t_5^2 + 24 t_4 t_5^2 + 8 t_5^3$$

symmetry: 1 order: 2

Abelian: True block diagonal: True factors: [2]

$$\text{Action on coordinates: } \left\{ \begin{pmatrix} -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -1 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 \end{pmatrix} \right\}$$

$$\text{Action on polynomials: } \left\{ \begin{pmatrix} -1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & -1 \end{pmatrix} \right\}$$

Cicy: {{6777, 2, 2}}

■ Cicy 6777, Symmetry 2

$$X = \begin{pmatrix} 1 & 1 & 0 & 0 \\ 0 & 0 & 0 & 2 \\ 0 & 0 & 2 & 0 \\ 2 & 0 & 0 & 0 \\ 1 & 1 & 1 & 1 \end{pmatrix}$$

$$\eta(X) = -64 \quad h^{-1}(X) = 5 \quad h^{2^{-1}}(X) = 37 \quad c_2(TX) = \{24, 24, 24, 24, 56\}$$

$$\kappa = 12 t_1 t_2 t_3 + 12 t_1 t_2 t_4 + 12 t_1 t_3 t_4 + 12 t_2 t_3 t_4 + 24 t_1 t_2 t_5 + 24 t_1 t_3 t_5 + 12 t_2 t_3 t_5 + 24 t_1 t_4 t_5 + 24 t_2 t_4 t_5 + 24 t_3 t_4 t_5 + 24 t_1 t_5^2 + 12 t_2 t_5^2 + 12 t_3 t_5^2 + 24 t_4 t_5^2 + 8 t_5^3$$

symmetry: 2 order: 2

Abelian: True block diagonal: True factors: [2]

$$\text{Action on coordinates: } \left\{ \begin{pmatrix} -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 \end{pmatrix} \right\}$$

$$\text{Action on polynomials: } \left\{ \begin{pmatrix} 1 & 0 & 0 & 0 \\ 0 & -1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & -1 \end{pmatrix} \right\}$$

Cicy: {{6770, 2, 1}}

■ Cicy 6770, Symmetry 1

$$X = \begin{pmatrix} 1 & 1 \\ 1 & 1 \\ 1 & 1 \\ 2 & 0 \\ 0 & 2 \end{pmatrix}$$

$$\eta(X) = -64 \quad h^{-1}(X) = 5 \quad h^{2^{-1}}(X) = 37 \quad c_2(TX) = \{24, 24, 24, 24, 24\}$$

$$\kappa = 24 t_1 t_2 t_3 + 12 t_1 t_2 t_4 + 12 t_1 t_3 t_4 + 12 t_2 t_3 t_4 + 12 t_1 t_2 t_5 + 12 t_1 t_3 t_5 + 12 t_2 t_3 t_5 + 12 t_1 t_4 t_5 + 12 t_2 t_4 t_5 + 12 t_3 t_4 t_5$$

symmetry: 1 order: 2

Abelian: True block diagonal: True factors: [2]

$$\text{Action on coordinates: } \left\{ \begin{pmatrix} -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 \end{pmatrix} \right\}$$

$$\text{Action on polynomials: } \left\{ \begin{pmatrix} -1 & 0 \\ 0 & 1 \end{pmatrix} \right\}$$

Cicy: {{7447, 4, 2}}

■ Cicy 7447, Symmetry 2

$$X = \begin{pmatrix} 1 & 1 \\ 1 & 1 \\ 1 & 1 \\ 1 & 1 \\ 1 & 1 \end{pmatrix}$$

$$\eta(X) = -80 \quad h^{-1}(X) = 5 \quad h^{2^{-1}}(X) = 45 \quad c_2(TX) = \{24, 24, 24, 24, 24\}$$

$$\kappa = 12 t_1 t_2 t_3 + 12 t_1 t_2 t_4 + 12 t_1 t_3 t_4 + 12 t_2 t_3 t_4 + 12 t_1 t_2 t_5 + 12 t_1 t_3 t_5 + 12 t_2 t_3 t_5 + 12 t_1 t_4 t_5 + 12 t_2 t_4 t_5 + 12 t_3 t_4 t_5$$

symmetry: 2 order: 4

Abelian: True block diagonal: True factors: [2, 2]

$$\text{Action on coordinates: } \left\{ \begin{pmatrix} 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -1 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & -1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 \end{pmatrix} \right\}$$

$$\text{Action on polynomials: } \left\{ \begin{pmatrix} 1 & 0 \\ 0 & -1 \end{pmatrix}, \begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix} \right\}$$

Cicy: {{7487, 4, 3}}

■ Cicy 7487, Symmetry 3

$$X = \begin{pmatrix} 0 & 2 \\ 1 & 1 \\ 1 & 1 \\ 1 & 1 \\ 1 & 1 \end{pmatrix}$$

$$\eta(X) = -80 \quad h^{-1}(X) = 5 \quad h^{2,1}(X) = 45 \quad c_2(TX) = \{24, 24, 24, 24, 24\}$$

$$\kappa = 12t_1t_2t_3 + 12t_1t_2t_4 + 12t_1t_3t_4 + 12t_2t_3t_4 + 12t_1t_2t_5 + 12t_1t_3t_5 + 12t_2t_3t_5 + 12t_1t_4t_5 + 12t_2t_4t_5 + 12t_3t_4t_5$$

symmetry: 3 order: 4

Abelian: True block diagonal: True factors: [2, 2]

$$\text{Action on coordinates: } \left\{ \begin{pmatrix} 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -1 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & -1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix} \right\}$$

$$\text{Action on polynomials: } \left\{ \begin{pmatrix} 1 & 0 \\ 0 & -1 \end{pmatrix}, \begin{pmatrix} 1 & 0 \\ 0 & -1 \end{pmatrix} \right\}$$