

$$R := \text{OreTools}:-\text{SetOreRing}(x, \text{'differential'})$$

$$\text{UnivariateOreRing}(x, \text{differential}) \quad (1)$$

$$A1 := \text{Matrix}([[x, 0, -2x], [0, 0, x], [0, 0, 0]])$$

$$\begin{bmatrix} x & 0 & -2x \\ 0 & 0 & x \\ 0 & 0 & 0 \end{bmatrix} \quad (2)$$

$$A0 := \text{Matrix}([[1, 0, -2x^2 - 2], [0, 0, 1], [x, 1, 0]])$$

$$\begin{bmatrix} 1 & 0 & -2x^2 - 2 \\ 0 & 0 & 1 \\ x & 1 & 0 \end{bmatrix} \quad (3)$$

$$\text{Extract}(A1, A0, \{1, 2\}, R)$$

$$\left[\begin{bmatrix} 0 & -2x^2 \\ 0 & -\frac{1}{x} \end{bmatrix}, \{[2, 1]\}, \begin{bmatrix} -\frac{1}{x} \end{bmatrix}, \{[1, 1]\} \right] \quad (4)$$