

Lösungen:

$$\begin{array}{l} Z_1 \\ Z_2 \\ Z_3 \\ Z_4 \end{array} \left(\begin{array}{cccc|c} 1 & 1 & 3 & 4 & 3 \\ 3 & 1 & 2 & 1 & 1 \\ 4 & 3 & 3 & 1 & 2 \\ 5 & 1 & 1 & 2 & 9 \end{array} \right) \begin{array}{l} \\ Z_2 - 3 \cdot Z_1 \\ Z_3 - 4 \cdot Z_1 \\ Z_4 - 5 \cdot Z_1 \end{array}$$

$$\begin{array}{l} Z_1 \\ Z_2 \\ Z_3 \\ Z_4 \end{array} \left(\begin{array}{cccc|c} 1 & 1 & 3 & 4 & 3 \\ 0 & -1 & -1 & -7 & -2 \\ 0 & 3 & 4 & 1 & 3 \\ 0 & 4 & 5 & 1 & 10 \end{array} \right) \begin{array}{l} \\ \\ Z_3 - 3 \cdot Z_2 \\ Z_4 - 4 \cdot Z_2 \end{array}$$

$$\begin{array}{l} Z_1 \\ Z_2 \\ Z_3 \\ Z_4 \end{array} \left(\begin{array}{cccc|c} 1 & 1 & 3 & 4 & 3 \\ 0 & 1 & 1 & 1 & 2 \\ 0 & 0 & 1 & 2 & 3 \\ 0 & 0 & 7 & 1 & 3 \end{array} \right) \begin{array}{l} \\ \\ \\ Z_4 - 7 \cdot Z_3 \end{array}$$

$$\begin{array}{l} Z_1 \\ Z_2 \\ Z_3 \\ Z_4 \end{array} \left(\begin{array}{cccc|c} 1 & 1 & 3 & 4 & 3 \\ 0 & 1 & 1 & 1 & 2 \\ 0 & 0 & 1 & 2 & 3 \\ 0 & 0 & 0 & 70 & 50 \end{array} \right)$$

$$\begin{array}{ccc|c} x & y & z & \\ 2 & 2 & 3 & 75 \\ 0 & 1 & -2 & 0 \\ 0 & 0 & 5 & 25 \end{array}$$

$$5z = 25$$

$$z = 5$$

$$1y - 2 \cdot 5 = 0$$

$$1y - 10 = 0$$

$$y = 10$$

$$2x + 2 \cdot 10 + 3 \cdot 5 = 75$$

$$2x + 20 + 15 = 75$$

$$2x = 40$$

$$x = 20$$