1.

$$\begin{pmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

2. $L = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 1 & 1 & 0 & 0 \\ \frac{3}{2} & \frac{35}{26} & 1 & 0 \\ 4 & \frac{25}{13} & \frac{8}{3} & 1 \end{bmatrix}, U = \begin{bmatrix} -2 & 7 & -9 & -9 \\ 0 & -13 & 3 & 7 \\ 0 & 0 & \frac{162}{13} & \frac{170}{13} \\ 0 & 0 & 0 & -\frac{64}{3} \end{bmatrix}$

3.

$$\begin{pmatrix} 11 & -13 & -6 \\ 8 & -1 & 9 \\ -6 & 16 & -17 \end{pmatrix}$$

4.

$$\begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 \\ 6 & 5 & 3 & 2 & 1 & 4 \end{pmatrix}$$

5.

$$\sigma = (1,7,6,8,2)(3,9,5,4), ord = 20, \sigma^{-743} = \begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\ 6 & 7 & 9 & 3 & 4 & 2 & 8 & 1 & 5 \end{pmatrix} = (1,6,2,7,8)(3,9,5,4)$$

6. Id;(3, 4);(1, 2, 5, 7, 6);(1, 2, 5, 7, 6) (3, 4);
   (1, 5, 6, 2, 7);(1, 5, 6, 2, 7) (3, 4);(1, 6, 7, 5, 2);(1, 6, 7, 5, 2) (3, 4);(1, 7, 2, 6, 5);
   (1, 7, 2, 6, 5) (3, 4);

7. брак

8. $4 + -4 * x + 1 * x^2 + -1 * x^3 + 4 * x^4$

9. При $\lambda = 4$

10. Определитель: -64, при $\lambda = []$ ранг равен 3, иначе 4