

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.

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

5.

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

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  $\lambda = \square$  ранг равен 3, иначе 4