

1.

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

$$2. L = \begin{bmatrix} 1 & 0 & 0 & 0 \\ -1 & 1 & 0 & 0 \\ 2 & -11 & 1 & 0 \\ \frac{3}{4} & \frac{3}{2} & -\frac{17}{79} & 1 \end{bmatrix}, U = \begin{bmatrix} 4 & 8 & 0 & 1 \\ 0 & 2 & 8 & 8 \\ 0 & 0 & 79 & 85 \\ 0 & 0 & 0 & \frac{3015}{316} \end{bmatrix}$$

3.

$$\begin{pmatrix} -17 & -8 & -1 \\ -2 & 14 & -14 \\ 17 & 2 & 10 \end{pmatrix}$$

4.

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

5.

$$\sigma = (1, 4, 6, 5, 2)(3, 8)(7, 9), \text{ord} = 10, \sigma^{-751} = \begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\ 2 & 5 & 8 & 1 & 6 & 4 & 9 & 3 & 7 \end{pmatrix} = (1, 2, 5, 6, 4)(3, 8)(7, 9)$$

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

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

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

7. брак

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

9. При  $\lambda = -9$

10. Определитель:  $-79\lambda - 630$ , при  $\lambda = [-630/79]$  ранг равен 3, иначе 4