

1.

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

$$2. L = \begin{bmatrix} 1 & 0 & 0 & 0 \\ -6 & 1 & 0 & 0 \\ -8 & \frac{11}{7} & 1 & 0 \\ 0 & -\frac{5}{14} & 0 & 1 \end{bmatrix}, U = \begin{bmatrix} 1 & -2 & 6 & 5 \\ 0 & -14 & 28 & 35 \\ 0 & 0 & -5 & -9 \\ 0 & 0 & 0 & \frac{27}{2} \end{bmatrix}$$

3.

$$\begin{pmatrix} 8 & -8 & -13 \\ 1 & -1 & -5 \\ 1 & 10 & -7 \end{pmatrix}$$

4.

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

5.

$$\sigma = (1, 8, 2, 6, 5, 7)(3, 4, 9), \text{ord} = 6, \sigma^{-719} = \begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\ 8 & 6 & 4 & 9 & 7 & 5 & 1 & 2 & 3 \end{pmatrix} = (1, 8, 2, 6, 5, 7)(3, 4, 9)$$

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

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

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

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

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

7. $7^n n + 7^n$

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

9. При $\lambda = -8$

10. Определитель: $79\lambda + 775$, при $\lambda = [-775/79]$ ранг равен 3, иначе 4