

1.

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

$$2. L = \begin{bmatrix} 1 & 0 & 0 & 0 \\ \frac{6}{5} & 1 & 0 & 0 \\ \frac{1}{5} & \frac{46}{31} & 1 & 0 \\ -\frac{4}{5} & -\frac{14}{31} & \frac{7}{8} & 1 \end{bmatrix}, U = \begin{bmatrix} 5 & -1 & 6 & 6 \\ 0 & \frac{31}{5} & -\frac{56}{5} & -\frac{6}{5} \\ 0 & 0 & \frac{168}{31} & -\frac{261}{31} \\ 0 & 0 & 0 & \frac{69}{8} \end{bmatrix}$$

3.

$$\begin{pmatrix} -18 & 3 & -7 \\ 19 & -3 & -11 \\ -6 & -14 & 15 \end{pmatrix}$$

4.

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

5.

$$\sigma = (1, 8, 2, 5, 3, 9, 7)(4, 6), \text{ord} = 14, \sigma^{-743} = \begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\ 7 & 8 & 5 & 6 & 2 & 4 & 9 & 1 & 3 \end{pmatrix} = (1, 7, 9, 3, 5, 2, 8)(4, 6)$$

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

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

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

$$7. \frac{9(-18)^n}{13} + \frac{4 \cdot 8^n}{13}$$

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

9. При  $\lambda = 7$

10. Определитель:  $-723$ , при  $\lambda = \square$  ранг равен 3, иначе 4