

1.

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

$$2. L = \begin{bmatrix} 1 & 0 & 0 & 0 \\ \frac{3}{2} & 1 & 0 & 0 \\ -\frac{3}{2} & -\frac{25}{13} & 1 & 0 \\ -2 & -\frac{28}{13} & \frac{430}{201} & 1 \end{bmatrix}, U = \begin{bmatrix} 4 & -9 & 3 & -6 \\ 0 & \frac{13}{2} & -\frac{27}{2} & 3 \\ 0 & 0 & -\frac{201}{13} & \frac{36}{13} \\ 0 & 0 & 0 & -\frac{634}{67} \end{bmatrix}$$

3.

$$\begin{pmatrix} 0 & 2 & -20 \\ -19 & -3 & -15 \\ 1 & 11 & -5 \end{pmatrix}$$

4.

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

5.

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

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

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

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

$$7. \frac{5(-10)^n}{8} + \frac{3 \cdot 6^n}{8}$$

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

9. При $\lambda = 5$

10. Определитель: -71 , при $\lambda = \square$ ранг равен 3, иначе 4