

1.

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

$$2. L = \begin{bmatrix} 1 & 0 & 0 & 0 \\ \frac{5}{2} & 1 & 0 & 0 \\ -\frac{7}{2} & -\frac{1}{11} & 1 & 0 \\ -\frac{5}{2} & -\frac{5}{11} & \frac{31}{224} & 1 \end{bmatrix}, U = \begin{bmatrix} 2 & -1 & 4 & -2 \\ 0 & -\frac{11}{2} & -7 & -2 \\ 0 & 0 & \frac{224}{11} & -\frac{123}{11} \\ 0 & 0 & 0 & -\frac{1425}{224} \end{bmatrix}$$

3.

$$\begin{pmatrix} 16 & -5 & 12 \\ 11 & 17 & -2 \\ 14 & -12 & -2 \end{pmatrix}$$

4.

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

5.

$$\sigma = (1, 2, 5, 7, 3, 8, 4)(6, 9), \text{ord} = 14, \sigma^{-773} = \begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\ 3 & 8 & 2 & 7 & 4 & 9 & 1 & 5 & 6 \end{pmatrix} = (1, 3, 2, 8, 5, 4, 7)(6, 9)$$

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

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

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

$$7. \frac{9(-18)^n}{19} + \frac{10 \cdot 20^n}{19}$$

$$8. 0 + -2 * x + -4 * x^2 + -3 * x^3 + -4 * x^4$$

9. При $\lambda = 3$

10. Определитель: $3\lambda + 164$, при $\lambda = [-164/3]$ ранг равен 3, иначе 4