

1.

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

$$2. L = \begin{bmatrix} 1 & 0 & 0 & 0 \\ \frac{8}{7} & 1 & 0 & 0 \\ -\frac{4}{7} & \frac{5}{4} & 1 & 0 \\ -\frac{1}{7} & -\frac{5}{12} & \frac{2}{11} & 1 \end{bmatrix}, U = \begin{bmatrix} -7 & -1 & -6 & -1 \\ 0 & -\frac{48}{7} & \frac{48}{7} & -\frac{34}{7} \\ 0 & 0 & -22 & \frac{15}{2} \\ 0 & 0 & 0 & -\frac{563}{66} \end{bmatrix}$$

3.

$$\begin{pmatrix} -11 & -1 & 6 \\ -9 & -8 & 6 \\ -4 & 19 & 10 \end{pmatrix}$$

4.

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

5.

$$\sigma = (1, 2, 8, 9, 5, 3, 4)(6, 7), \text{ord} = 14, \sigma^{-733} = \begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\ 8 & 9 & 1 & 2 & 4 & 7 & 6 & 5 & 3 \end{pmatrix} = (1, 8, 5, 4, 2, 9, 3)(6, 7)$$

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

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

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

$$7. -\frac{6 \cdot 12^n}{19} + \frac{25 \cdot 50^n}{19}$$

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

9. При  $\lambda = 5$

10. Определитель:  $113\lambda - 593$ , при  $\lambda = [593/113]$  ранг равен 3, иначе 4