

1.

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

$$2. L = \begin{bmatrix} 1 & 0 & 0 & 0 \\ \frac{4}{7} & 1 & 0 & 0 \\ -\frac{1}{7} & -\frac{41}{94} & 1 & 0 \\ 1 & \frac{7}{47} & \frac{514}{603} & 1 \end{bmatrix}, U = \begin{bmatrix} -7 & 6 & 2 & 0 \\ 0 & -\frac{94}{7} & -\frac{50}{7} & -9 \\ 0 & 0 & -\frac{603}{47} & -\frac{1121}{94} \\ 0 & 0 & 0 & \frac{5732}{603} \end{bmatrix}$$

3.

$$\begin{pmatrix} 4 & 0 & -5 \\ -14 & 14 & 4 \\ -9 & -14 & 4 \end{pmatrix}$$

4.

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

5.

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

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

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

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

$$7. -\frac{5(-20)^n}{7} + \frac{12(-48)^n}{7}$$

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

9. При  $\lambda = -4$

10. Определитель:  $12\lambda$ , при  $\lambda = [0]$  ранг равен 3, иначе 4