

1.

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

$$2. L = \begin{bmatrix} 1 & 0 & 0 & 0 \\ \frac{5}{2} & 1 & 0 & 0 \\ 2 & \frac{2}{7} & 1 & 0 \\ -\frac{9}{2} & \frac{25}{7} & -\frac{508}{89} & 1 \end{bmatrix}, U = \begin{bmatrix} -2 & 1 & -5 & 2 \\ 0 & \frac{7}{2} & \frac{23}{2} & -1 \\ 0 & 0 & \frac{89}{7} & -\frac{5}{7} \\ 0 & 0 & 0 & \frac{1557}{89} \end{bmatrix}$$

3.

$$\begin{pmatrix} 4 & 5 & 9 \\ -13 & -2 & -5 \\ 12 & -8 & -11 \end{pmatrix}$$

4.

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

5.

$$\sigma = (1, 5, 4, 2, 8, 3)(6, 7, 9), \text{ord} = 6, \sigma^{-751} = \begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\ 3 & 4 & 8 & 5 & 1 & 9 & 6 & 2 & 7 \end{pmatrix} = (1, 3, 8, 2, 4, 5)(6, 9, 7)$$

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

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

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

$$7. \frac{(-18)^n}{2} + \frac{18^n}{2}$$

$$8. 0 + 1 * x + 0 * x^2 + 3 * x^3 + 2 * x^4$$

9. При $\lambda = 9$

10. Определитель: $-30\lambda - 235$, при $\lambda = [-47/6]$ ранг равен 3, иначе 4