

1.

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

$$2. L = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 1 & 1 & 0 & 0 \\ 0 & -1 & 1 & 0 \\ -\frac{5}{4} & -\frac{6}{7} & \frac{11}{2} & 1 \end{bmatrix}, U = \begin{bmatrix} -4 & 8 & 2 & 0 \\ 0 & -7 & -7 & 1 \\ 0 & 0 & -1 & 3 \\ 0 & 0 & 0 & -\frac{233}{14} \end{bmatrix}$$

3.

$$\begin{pmatrix} 4 & -8 & 6 \\ 0 & -19 & -12 \\ -10 & -16 & 5 \end{pmatrix}$$

4.

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

5.

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

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

$$7. \frac{(-10)^n}{8} + \frac{7 \cdot 70^n}{8}$$

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

9. При $\lambda = 2$

10. Определитель: $23 - \lambda$, при $\lambda = [23]$ ранг равен 3, иначе 4