

1.

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

$$2. L = \begin{bmatrix} 1 & 0 & 0 & 0 \\ \frac{5}{2} & 1 & 0 & 0 \\ 3 & 7 & 1 & 0 \\ 4 & 11 & \frac{654}{425} & 1 \end{bmatrix}, U = \begin{bmatrix} -4 & -4 & 3 & 4 \\ 0 & 1 & -\frac{31}{2} & -12 \\ 0 & 0 & \frac{425}{4} & 85 \\ 0 & 0 & 0 & -\frac{49}{5} \end{bmatrix}$$

3.

$$\begin{pmatrix} -17 & -12 & 11 \\ 5 & 12 & 3 \\ 2 & -1 & -14 \end{pmatrix}$$

4.

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

5.

$$\sigma = (1, 7, 9)(2, 5, 3, 6, 8, 4), \text{ord} = 6, \sigma^{-787} = \begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\ 9 & 4 & 5 & 8 & 2 & 3 & 1 & 6 & 7 \end{pmatrix} = (1, 9, 7)(2, 4, 8, 6, 3, 5)$$

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

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

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

$$7. -\frac{3 \cdot 24^n}{4} + \frac{7 \cdot 56^n}{4}$$

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

9. При $\lambda = -6$

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