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

2. $L = \begin{bmatrix} 1 & 0 & 0 & 0 \\ \frac{10}{7} & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ \frac{3}{7} & \frac{38}{59} & -\frac{62}{59} & 1 \end{bmatrix}$, $U = \begin{bmatrix} -7 & -1 & -9 & 1 \\ 0 & \frac{59}{7} & \frac{62}{7} & -\frac{59}{7} \\ 0 & 0 & -3 & 8 \\ 0 & 0 & 0 & \frac{1027}{59} \end{bmatrix}$

3. $$\begin{pmatrix} -3 & -7 & -14 \\ -1 & 0 & -16 \\ -2 & 16 & 14 \end{pmatrix}$$

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

5. $$\sigma = (1,3,4,7)(2,6,5,9,8), ord = 20, \sigma^{-797} = \begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\ 7 & 9 & 1 & 3 & 2 & 8 & 4 & 5 & 6 \end{pmatrix} = (1,7,4,3)(2,9,6,8,5)$$

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

7. $\frac{2(-6)^n}{23} + \frac{21 \cdot 63^n}{23}$

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

9. При $\lambda = 8$

10. Определитель: $-46\lambda - 239$, при $\lambda = [-239/46]$ ранг равен 3, иначе 4