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

2. $L = \begin{bmatrix} 1 & 0 & 0 & 0 \\ \frac{1}{2} & 1 & 0 & 0 \\ \frac{7}{4} & \frac{79}{2} & 1 & 0 \\ 0 & -2 & -\frac{2}{19} & 1 \end{bmatrix}$, $U = \begin{bmatrix} -4 & -9 & 6 & 8 \\ 0 & \frac{1}{2} & -1 & 1 \\ 0 & 0 & 19 & -\frac{119}{2} \\ 0 & 0 & 0 & -\frac{24}{19} \end{bmatrix}$

3. $$\begin{pmatrix} 17 & -15 & 17 \\ -15 & -13 & -3 \\ 5 & 10 & -12 \end{pmatrix}$$

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

5. $$\sigma = (1,5,7)(2,3,9,8)(4,6), ord = 12, \sigma^{-733} = \begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\ 7 & 8 & 2 & 6 & 1 & 4 & 5 & 9 & 3 \end{pmatrix} = (1,7,5)(2,8,9,3)(4,6)$$

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

7. $\frac{32(-32)^n}{77} + \frac{45 \cdot 45^n}{77}$

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

9. При $\lambda = -9$

10. Определитель: $685 - 105\lambda$, при $\lambda = [137/21]$ ранг равен 3, иначе 4