1.

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

2. $L = \begin{bmatrix} 1 & 0 & 0 & 0 \\ \frac{7}{2} & 1 & 0 & 0 \\ \frac{5}{2} & \frac{37}{51} & 1 & 0 \\ -4 & -\frac{86}{51} & \frac{244}{33} & 1 \end{bmatrix}, U = \begin{bmatrix} -2 & 9 & -5 & -1 \\ 0 & -\frac{51}{2} & \frac{15}{2} & \frac{21}{2} \\ 0 & 0 & -\frac{33}{17} & \frac{32}{17} \\ 0 & 0 & 0 & -\frac{304}{33} \end{bmatrix}$

3.

$$\begin{pmatrix} 14 & 4 & 2 \\ -7 & -6 & 2 \\ -3 & -6 & 18 \end{pmatrix}$$

4.

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

5.

$$\sigma = (1,3)(2,5,6,7,8,4,9), ord = 14, \sigma^{-733} = \begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\ 3 & 6 & 1 & 2 & 7 & 8 & 4 & 9 & 5 \end{pmatrix} = (1,3)(2,6,8,9,5,7,4)$$

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

7. $\frac{10(-10)^n}{73} + \frac{63 \cdot 63^n}{73}$

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

9. При $\lambda = -4$

10. Определитель: $18\lambda + 92$, при $\lambda = [-46/9]$ ранг равен 3, иначе 4