1.

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

2. $L = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ \frac{3}{10} & \frac{69}{100} & 1 & 0 \\ -\frac{3}{10} & \frac{71}{100} & \frac{113}{287} & 1 \end{bmatrix}, U = \begin{bmatrix} -10 & 3 & 3 & -10 \\ 0 & -10 & 5 & 9 \\ 0 & 0 & -\frac{287}{20} & -\frac{921}{100} \\ 0 & 0 & 0 & -\frac{5401}{1435} \end{bmatrix}$

3.

$$\begin{pmatrix} -20 & -8 & 16 \\ -11 & 19 & 11 \\ 1 & 9 & -13 \end{pmatrix}$$

4.

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

5.

$$\sigma = (1,8,9,6)(2,3,5,7,4), ord = 20, \sigma^{-739} = \begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\ 8 & 3 & 5 & 2 & 7 & 1 & 4 & 9 & 6 \end{pmatrix} = (1,8,9,6)(2,3,5,7,4)$$

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

7. $\frac{2(-28)^n}{3} + \frac{14^n}{3}$

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

9. При $\lambda = 9$

10. Определитель: 156, при $\lambda = []$ ранг равен 3, иначе 4