

1.

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

$$2. L = \begin{bmatrix} 1 & 0 & 0 & 0 \\ -\frac{3}{2} & 1 & 0 & 0 \\ \frac{3}{2} & -\frac{13}{33} & 1 & 0 \\ -\frac{7}{6} & 1 & -\frac{66}{37} & 1 \end{bmatrix}, U = \begin{bmatrix} -6 & -9 & 3 & -3 \\ 0 & -\frac{33}{2} & \frac{19}{2} & -\frac{11}{2} \\ 0 & 0 & \frac{74}{33} & \frac{19}{3} \\ 0 & 0 & 0 & \frac{233}{37} \end{bmatrix}$$

3.

$$\begin{pmatrix} -11 & 17 & 10 \\ 17 & 1 & -12 \\ 19 & 17 & -4 \end{pmatrix}$$

4.

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

5.

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

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

$$7. \frac{20 \cdot 40^n}{17} - \frac{3 \cdot 6^n}{17}$$

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

9. При $\lambda = -9$

10. Определитель: $35\lambda - 213$, при $\lambda = [213/35]$ ранг равен 3, иначе 4