

1.

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

$$2. L = \begin{bmatrix} 1 & 0 & 0 & 0 \\ -\frac{8}{3} & 1 & 0 & 0 \\ -\frac{8}{3} & \frac{11}{15} & 1 & 0 \\ -\frac{2}{3} & \frac{2}{15} & -\frac{122}{229} & 1 \end{bmatrix}, U = \begin{bmatrix} 3 & -9 & 8 & 5 \\ 0 & -30 & \frac{46}{3} & \frac{22}{3} \\ 0 & 0 & \frac{229}{45} & \frac{673}{45} \\ 0 & 0 & 0 & \frac{4196}{229} \end{bmatrix}$$

3.

$$\begin{pmatrix} 11 & 10 & -3 \\ 0 & 10 & 5 \\ 11 & 9 & 3 \end{pmatrix}$$

4.

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

5.

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

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

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

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

$$7. \frac{20(-20)^n}{17} - \frac{3(-3)^n}{17}$$

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

9. При $\lambda = 2$

10. Определитель: $101\lambda + 700$, при $\lambda = [-700/101]$ ранг равен 3, иначе 4