

1.

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

$$2. L = \begin{bmatrix} 1 & 0 & 0 & 0 \\ \frac{4}{3} & 1 & 0 & 0 \\ \frac{1}{2} & -\frac{21}{40} & 1 & 0 \\ \frac{1}{6} & \frac{1}{8} & -\frac{65}{201} & 1 \end{bmatrix}, U = \begin{bmatrix} -6 & -4 & -7 & 2 \\ 0 & \frac{40}{3} & \frac{49}{3} & \frac{1}{3} \\ 0 & 0 & \frac{603}{40} & -\frac{393}{40} \\ 0 & 0 & 0 & -\frac{841}{67} \end{bmatrix}$$

3.

$$\begin{pmatrix} 19 & -11 & -3 \\ 0 & 10 & -9 \\ 11 & -18 & 8 \end{pmatrix}$$

4.

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

5.

$$\sigma = (1, 6, 8, 4, 9, 5)(2, 3, 7), \text{ord} = 6, \sigma^{-773} = \begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\ 6 & 3 & 7 & 9 & 1 & 8 & 2 & 4 & 5 \end{pmatrix} = (1, 6, 8, 4, 9, 5)(2, 3, 7)$$

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

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

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

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

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

7. брак

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

9. При $\lambda = -8$

10. Определитель: $127 - 75\lambda$, при $\lambda = [127/75]$ ранг равен 3, иначе 4