

1.

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

$$2. L = \begin{bmatrix} 1 & 0 & 0 & 0 \\ -\frac{1}{4} & 1 & 0 & 0 \\ \frac{5}{5} & \frac{12}{11} & 1 & 0 \\ -\frac{2}{5} & \frac{13}{22} & -\frac{23}{98} & 1 \end{bmatrix}, U = \begin{bmatrix} -10 & -6 & -10 & -5 \\ 0 & \frac{22}{5} & 5 & -\frac{19}{2} \\ 0 & 0 & -\frac{49}{11} & \frac{136}{11} \\ 0 & 0 & 0 & \frac{2257}{196} \end{bmatrix}$$

3.

$$\begin{pmatrix} 18 & -11 & -12 \\ -6 & 6 & -19 \\ -12 & -4 & 7 \end{pmatrix}$$

4.

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

5.

$$\sigma = (1, 9, 2, 6, 7, 3)(4, 5, 8), \text{ord} = 6, \sigma^{-811} = \begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\ 3 & 9 & 7 & 8 & 4 & 2 & 6 & 5 & 1 \end{pmatrix} = (1, 3, 7, 6, 2, 9)(4, 8, 5)$$

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

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

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

7. брак

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

9. При $\lambda = 6$

10. Определитель: $-45\lambda - 152$, при $\lambda = [-152/45]$ ранг равен 3, иначе 4