

1.

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

$$2. L = \begin{bmatrix} 1 & 0 & 0 & 0 \\ -\frac{7}{5} & 1 & 0 & 0 \\ -\frac{3}{5} & \frac{22}{17} & 1 & 0 \\ \frac{9}{5} & -\frac{43}{34} & -\frac{183}{838} & 1 \end{bmatrix}, U = \begin{bmatrix} -5 & -2 & -9 & -9 \\ 0 & -\frac{34}{5} & -\frac{113}{5} & -\frac{73}{5} \\ 0 & 0 & \frac{419}{17} & \frac{141}{17} \\ 0 & 0 & 0 & -\frac{1028}{419} \end{bmatrix}$$

3.

$$\begin{pmatrix} -17 & 11 & -18 \\ -19 & -4 & -20 \\ 2 & -14 & 12 \end{pmatrix}$$

4.

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

5.

$$\sigma = (1, 5, 8, 2, 4)(3, 9, 7, 6), \text{ord} = 20, \sigma^{-733} = \begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\ 8 & 1 & 6 & 5 & 2 & 7 & 9 & 4 & 3 \end{pmatrix} = (1, 8, 4, 5, 2)(3, 6, 7, 9)$$

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

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

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

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

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

$$7. \frac{6 \cdot 24^n}{5} - \frac{4^n}{5}$$

$$8. 0 + 4 * x + -1 * x^2 + -3 * x^3 + -4 * x^4$$

9. При $\lambda = 6$

10. Определитель: $-59\lambda - 86$, при $\lambda = [-86/59]$ ранг равен 3, иначе 4