

1.

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

$$2. L = \begin{bmatrix} 1 & 0 & 0 & 0 \\ \frac{9}{2} & 1 & 0 & 0 \\ \frac{7}{2} & \frac{4}{3} & 1 & 0 \\ -3 & 0 & \frac{102}{95} & 1 \end{bmatrix}, U = \begin{bmatrix} 2 & 0 & -10 & -9 \\ 0 & -6 & 47 & \frac{69}{2} \\ 0 & 0 & -\frac{95}{3} & -\frac{25}{2} \\ 0 & 0 & 0 & -\frac{125}{19} \end{bmatrix}$$

3.

$$\begin{pmatrix} -12 & -7 & 11 \\ -18 & -15 & 4 \\ -16 & 8 & 9 \end{pmatrix}$$

4.

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

5.

$$\sigma = (1, 3, 7)(2, 8, 9, 4)(5, 6), \text{ord} = 12, \sigma^{-733} = \begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\ 7 & 4 & 1 & 9 & 6 & 5 & 3 & 2 & 8 \end{pmatrix} = (1, 7, 3)(2, 4, 9, 8)(5, 6)$$

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

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

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

$$7. \frac{35(-70)^n}{38} + \frac{3 \cdot 6^n}{38}$$

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

9. При $\lambda = 8$

10. Определитель: $8\lambda - 300$, при $\lambda = [75/2]$ ранг равен 3, иначе 4