

1.

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

$$2. L = \begin{bmatrix} 1 & 0 & 0 & 0 \\ -1 & 1 & 0 & 0 \\ \frac{2}{7} & -\frac{1}{6} & 1 & 0 \\ 0 & -\frac{7}{12} & -\frac{1}{16} & 1 \end{bmatrix}, U = \begin{bmatrix} -7 & 7 & 7 & 5 \\ 0 & 12 & 4 & -3 \\ 0 & 0 & -\frac{16}{3} & -\frac{55}{14} \\ 0 & 0 & 0 & \frac{1}{224} \end{bmatrix}$$

3.

$$\begin{pmatrix} -19 & -3 & -16 \\ 3 & -18 & 6 \\ -15 & -20 & 13 \end{pmatrix}$$

4.

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

5.

$$\sigma = (1, 8, 6)(2, 4)(3, 5, 9, 7), \text{ord} = 12, \sigma^{-821} = \begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\ 8 & 4 & 7 & 2 & 3 & 1 & 9 & 6 & 5 \end{pmatrix} = (1, 8, 6)(2, 4)(3, 7, 9, 5)$$

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

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

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

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

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

$$7. \frac{3(-30)^n}{4} + \frac{10^n}{4}$$

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

$$9. \text{ При } \lambda = -5$$

$$10. \text{ Определитель: } 113\lambda + 304, \text{ при } \lambda = [-304/113] \text{ ранг равен } 3, \text{ иначе } 4$$