

1.

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

$$2. L = \begin{bmatrix} 1 & 0 & 0 & 0 \\ -1 & 1 & 0 & 0 \\ -1 & -\frac{5}{2} & 1 & 0 \\ -1 & -\frac{13}{2} & 2 & 1 \end{bmatrix}, U = \begin{bmatrix} 2 & 7 & -9 & 3 \\ 0 & -2 & -8 & 2 \\ 0 & 0 & -33 & 6 \\ 0 & 0 & 0 & -2 \end{bmatrix}$$

3.

$$\begin{pmatrix} -6 & -3 & -7 \\ 11 & 14 & 18 \\ 11 & -12 & -15 \end{pmatrix}$$

4.

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

5.

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

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

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

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

$$7. \frac{3(-24)^n}{8} + \frac{5 \cdot 40^n}{8}$$

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

9. При $\lambda = -5$

10. Определитель: $54\lambda - 88$, при $\lambda = [44/27]$ ранг равен 3, иначе 4