

1.

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

$$2. L = \begin{bmatrix} 1 & 0 & 0 & 0 \\ \frac{10}{3} & 1 & 0 & 0 \\ \frac{5}{3} & \frac{40}{23} & 1 & 0 \\ 3 & \frac{42}{23} & \frac{123}{35} & 1 \end{bmatrix}, U = \begin{bmatrix} -3 & -5 & 1 & -8 \\ 0 & \frac{23}{3} & \frac{11}{3} & \frac{80}{3} \\ 0 & 0 & -\frac{70}{23} & -\frac{668}{23} \\ 0 & 0 & 0 & \frac{2708}{35} \end{bmatrix}$$

3.

$$\begin{pmatrix} -17 & -10 & 10 \\ -11 & 15 & 19 \\ -18 & -6 & 2 \end{pmatrix}$$

4.

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

5.

$$\sigma = (1, 9, 2, 8)(3, 5, 6)(4, 7), \text{ord} = 12, \sigma^{-787} = \begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\ 9 & 8 & 6 & 7 & 3 & 5 & 4 & 1 & 2 \end{pmatrix} = (1, 9, 2, 8)(3, 6, 5)(4, 7)$$

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

$$7. -\frac{7(-14)^n}{17} + \frac{24(-48)^n}{17}$$

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

9. При $\lambda = -3$

10. Определитель: 210, при $\lambda = \square$ ранг равен 3, иначе 4