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

2. $L = \begin{bmatrix} 1 & 0 & 0 & 0 \\ -\frac{1}{4} & 1 & 0 & 0 \\ -\frac{5}{4} & \frac{11}{3} & 1 & 0 \\ -\frac{3}{4} & \frac{5}{3} & \frac{49}{79} & 1 \end{bmatrix}, U = \begin{bmatrix} -4 & -9 & 9 & -3 \\ 0 & -\frac{21}{4} & -\frac{11}{4} & \frac{13}{4} \\ 0 & 0 & \frac{79}{3} & -\frac{77}{3} \\ 0 & 0 & 0 & \frac{1205}{79} \end{bmatrix}$

3. $$\begin{pmatrix} 19 & 8 & -18 \\ 15 & -18 & -18 \\ 12 & -11 & 4 \end{pmatrix}$$

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

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

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

7. брак

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

9. При $\lambda = -8$

10. Определитель: $442 - 104\lambda$, при $\lambda = [17/4]$ ранг равен 3, иначе 4