

1.

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

$$2. L = \begin{bmatrix} 1 & 0 & 0 & 0 \\ -\frac{9}{8} & 1 & 0 & 0 \\ -\frac{5}{8} & \frac{19}{11} & 1 & 0 \\ -\frac{5}{4} & \frac{54}{11} & \frac{424}{29} & 1 \end{bmatrix}, U = \begin{bmatrix} 8 & 3 & -9 & 6 \\ 0 & \frac{11}{8} & -\frac{73}{8} & \frac{55}{4} \\ 0 & 0 & \frac{29}{11} & -15 \\ 0 & 0 & 0 & \frac{4736}{29} \end{bmatrix}$$

3.

$$\begin{pmatrix} -4 & -18 & 0 \\ -12 & -8 & -10 \\ -9 & 12 & -16 \end{pmatrix}$$

4.

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

5.

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

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

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

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

$$7. \frac{4(-20)^n}{13} + \frac{9 \cdot 45^n}{13}$$

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

9. При $\lambda = 7$

10. Определитель: $70 - 14\lambda$, при $\lambda = [5]$ ранг равен 3, иначе 4