Ответы: 221 ПИ. Вариант 45

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

2. $L = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 1 & 1 & 0 & 0 \\ 1 & -\frac{1}{8} & 1 & 0 \\ \frac{2}{3} & \frac{17}{24} & \frac{101}{81} & 1 \end{bmatrix}, U = \begin{bmatrix} -9 & 4 & -5 & -6 \\ 0 & -8 & 3 & 4 \\ 0 & 0 & \frac{27}{8} & \frac{9}{2} \\ 0 & 0 & 0 & -\frac{112}{9} \end{bmatrix}$

3. $$\begin{pmatrix} 0 & 18 & 15 \\ -18 & -17 & -7 \\ -8 & -2 & 15 \end{pmatrix}$$

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

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

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

7. $\frac{9(-9)^n}{41} + \frac{32 \cdot 32^n}{41}$

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

9. При $\lambda = 4$

10. Определитель: $100 - 10\lambda$, при $\lambda = [10]$ ранг равен 3, иначе 4