Ответы: 223 ПИ. Вариант 15

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

2. $L = \begin{bmatrix} 1 & 0 & 0 & 0 \\ -\frac{2}{7} & 1 & 0 & 0 \\ \frac{4}{7} & -\frac{20}{17} & 1 & 0 \\ \frac{5}{7} & \frac{10}{17} & -\frac{45}{56} & 1 \end{bmatrix}$, $U = \begin{bmatrix} -7 & -1 & -7 & -3 \\ 0 & -\frac{51}{7} & -9 & \frac{15}{7} \\ 0 & 0 & -\frac{112}{17} & \frac{174}{17} \\ 0 & 0 & 0 & \frac{59}{28} \end{bmatrix}$

3. $$\begin{pmatrix} -1 & 10 & -17 \\ -10 & 19 & -11 \\ -14 & -5 & -13 \end{pmatrix}$$

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

5. $$\sigma = (1,4,2,3,5,9)(6,7,8), ord = 6, \sigma^{-811} = \begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\ 9 & 4 & 2 & 1 & 3 & 8 & 6 & 7 & 5 \end{pmatrix} = (1,9,5,3,2,4)(6,8,7)$$

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

7. $\frac{3(-30)^n}{4} + \frac{10^n}{4}$

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

9. При $\lambda = 2$

10. Определитель: $104 - 55\lambda$, при $\lambda = [104/55]$ ранг равен 3, иначе 4