Ответы: 222 ПИ. Вариант 1

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

2. $L = \begin{bmatrix} 1 & 0 & 0 & 0 \\ -4 & 1 & 0 & 0 \\ 7 & -\frac{42}{29} & 1 & 0 \\ -5 & \frac{43}{29} & \frac{7}{18} & 1 \end{bmatrix}$, $U = \begin{bmatrix} -1 & 7 & -8 & 0 \\ 0 & 29 & -29 & 6 \\ 0 & 0 & 18 & \frac{49}{29} \\ 0 & 0 & 0 & -\frac{8641}{522} \end{bmatrix}$

3. $$\begin{pmatrix} 4 & -11 & -10 \\ -11 & 3 & 0 \\ 18 & -14 & 17 \end{pmatrix}$$

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

5. $$\sigma = (1,9,5,7,3,6,4)(2,8), ord = 14, \sigma^{-751} = \begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\ 6 & 8 & 5 & 3 & 1 & 7 & 9 & 2 & 4 \end{pmatrix} = (1,6,7,9,4,3,5)(2,8)$$

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

7. $\frac{21(-21)^n}{31} + \frac{10 \cdot 10^n}{31}$

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

9. При $\lambda = 4$

10. Определитель: $-\lambda - 51$, при $\lambda = [-51]$ ранг равен 3, иначе 4