Ответы: 222 ПИ. Вариант 4

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

2. $L = \begin{bmatrix} 1 & 0 & 0 & 0 \\ -2 & 1 & 0 & 0 \\ -\frac{8}{3} & \frac{104}{45} & 1 & 0 \\ -\frac{2}{3} & \frac{4}{9} & \frac{41}{71} & 1 \end{bmatrix}, U = \begin{bmatrix} 3 & -10 & 2 & -2 \\ 0 & -15 & -5 & -3 \\ 0 & 0 & \frac{71}{9} & \frac{8}{5} \\ 0 & 0 & 0 & \frac{27}{355} \end{bmatrix}$

3. $$\begin{pmatrix} 4 & 11 & 19 \\ 2 & 1 & 14 \\ -14 & -3 & -15 \end{pmatrix}$$

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

5. $$\sigma = (1,3,5,7,2,6,4)(8,9), ord = 14, \sigma^{-827} = \begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\ 4 & 7 & 1 & 6 & 3 & 2 & 5 & 9 & 8 \end{pmatrix} = (1,4,6,2,7,5,3)(8,9)$$

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

7. брак

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

9. При $\lambda = -1$

10. Определитель: $96 - 95\lambda$, при $\lambda = [96/95]$ ранг равен 3, иначе 4