Ответы: 223 ПИ. Вариант 16

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

2. $L = \begin{bmatrix} 1 & 0 & 0 & 0 \\ -\frac{10}{9} & 1 & 0 & 0 \\ \frac{1}{9} & -\frac{14}{5} & 1 & 0 \\ -\frac{7}{9} & \frac{22}{25} & -\frac{337}{670} & 1 \end{bmatrix}$, $U = \begin{bmatrix} 9 & -2 & -6 & 4 \\ 0 & \frac{25}{9} & -\frac{38}{3} & \frac{58}{9} \\ 0 & 0 & -\frac{134}{5} & \frac{63}{5} \\ 0 & 0 & 0 & -\frac{1489}{670} \end{bmatrix}$

3.
$$\begin{pmatrix} -15 & 19 & -15 \\ 17 & -13 & 2 \\ -12 & 6 & 13 \end{pmatrix}$$

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

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

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

7. $-6 \cdot 54^n + 7 \cdot 63^n$

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

9. При $\lambda = 9$

10. Определитель: $298 - 47\lambda$, при $\lambda = [298/47]$ ранг равен 3, иначе 4