Ответы: 225 ПИ. Вариант 12

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

2. $L = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ -\frac{8}{9} & -\frac{71}{45} & 1 & 0 \\ -\frac{1}{9} & -\frac{46}{45} & \frac{11}{646} & 1 \end{bmatrix}, U = \begin{bmatrix} -9 & -1 & 1 & 4 \\ 0 & 5 & 6 & 3 \\ 0 & 0 & \frac{646}{45} & \frac{148}{45} \\ 0 & 0 & 0 & \frac{2731}{323} \end{bmatrix}$

3. $$\begin{pmatrix} -11 & -11 & -17 \\ -18 & 11 & -12 \\ 12 & 14 & 8 \end{pmatrix}$$

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

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

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

7. $-5 \cdot 20^n + 6 \cdot 24^n$

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

9. При $\lambda = 6$

10. Определитель: $-30\lambda - 678$, при $\lambda = [-113/5]$ ранг равен 3, иначе 4