Ответы: 221 ПИ. Вариант 41

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

2. $L = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 3 & 1 & 0 & 0 \\ \frac{5}{3} & -\frac{11}{12} & 1 & 0 \\ -3 & \frac{3}{2} & -\frac{330}{29} & 1 \end{bmatrix}, U = \begin{bmatrix} -3 & -1 & -3 & -2 \\ 0 & -4 & 7 & 14 \\ 0 & 0 & \frac{29}{12} & \frac{133}{6} \\ 0 & 0 & 0 & \frac{6300}{29} \end{bmatrix}$

3. $$\begin{pmatrix} -5 & -16 & 2 \\ 1 & -20 & 1 \\ 9 & -4 & -8 \end{pmatrix}$$

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

5. $$\sigma = (1,4,6,9,3,2)(5,7,8), ord = 6, \sigma^{-727} = \begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\ 2 & 3 & 9 & 1 & 8 & 4 & 5 & 7 & 6 \end{pmatrix} = (1,2,3,9,6,4)(5,8,7)$$

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

7. $-\frac{4(-8)^n}{41} + \frac{45(-90)^n}{41}$

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

9. При $\lambda = 7$

10. Определитель: $26\lambda + 143$, при $\lambda = [-11/2]$ ранг равен 3, иначе 4