Ответы: 224 ПИ. Вариант 15

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

2. $L = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 8 & 1 & 0 & 0 \\ 5 & -\frac{9}{10} & 1 & 0 \\ 7 & -\frac{1}{2} & \frac{119}{125} & 1 \end{bmatrix}$, $U = \begin{bmatrix} -1 & 0 & 6 & 9 \\ 0 & -10 & -45 & -69 \\ 0 & 0 & -\frac{125}{2} & -\frac{1161}{10} \\ 0 & 0 & 0 & \frac{8767}{625} \end{bmatrix}$

3. $$\begin{pmatrix} 1 & 14 & 5 \\ -18 & 3 & -14 \\ 3 & -19 & -17 \end{pmatrix}$$

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

5. $$\sigma = (1,5,3,7,8)(2,6,4,9), ord = 20, \sigma^{-787} = \begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\ 7 & 6 & 1 & 9 & 8 & 4 & 5 & 3 & 2 \end{pmatrix} = (1,7,5,8,3)(2,6,4,9)$$

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

7. $\frac{9 \cdot 63^n}{8} - \frac{7^n}{8}$

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

9. При $\lambda = -8$

10. Определитель: $60\lambda + 351$, при $\lambda = [-117/20]$ ранг равен 3, иначе 4