

11/1/21

Q7

1. Guido Grandi, he used $S_2 = 1 - 1 + 1 - 1 \dots$
 $1 - S = 1 - (1 - 1 + 1 - 1) \dots$
 $1 - S = S$
 $1 = 2S \rightarrow S = \frac{1}{2}$

2. The Marquis de Chatelet, and Voltaire.

3. Joseph Lagrange

4.
$$\begin{bmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\ 9 & 8 & 7 & 5 & 6 & 4 & 3 & 2 & 1 \end{bmatrix} = (19)(28)(37)(456)$$

$$\text{len}(2, 2, 2, 3) = 6$$

$i > 6$ s.t. $\pi^i = B$

5. There is only one swap taking place in the puzzle, therefore because there is one square open we cannot swap just one set of numbers.

The number of inversions changes by 21, 23 and the parity of the row distance. The sum of the 'shaded' block is even.