Lecture 10 - Latin Squares and Rook Polynomials

Latin Squares

- Definition: Let n be a positive integer and let S be a set of n distinct elements. A Latin square of order n based in the set S is an n-by n array, each of whose entries is an element of S such that each of the n elements of S occurs exactly once in each row and each column.
- It follows from the pigeonhole principle that we can check in either of two ways whether an n-by-n array based on a set S of n elements in a Latin square.
    - Check that each element of S occurs at least once in each row and at least once in each column
    - Check that no element of S occurs more than once in each row and no more than once in each column
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