Week 2 Writing Problem

Mxsail,
The Art of Problem Solving,
Itermediate Counting and Probability

October 11, 2025

Problem Statment

A standard 8×8 chessboard has 64 unit squares.

Eight rooks are randomly placed on different squares of a chessboard. A rook is said to attack all of the squares in its row and its column.

Compute the probability that every square is occupied or attacked by at least 1 rook. You may express your answer in terms of binomial coefficients.