

Department of Mathematics and Computer Science
Probability and Statistics Challenge Problems 8

Please submit solutions by Wednesday November 25, at 3pm

A chessboard is made up of 64 squares(8 rows and 8 columns) arranged in two alternating colours. A rook (or castle) is a chess piece that can move only in straight lines either vertically or horizontally, forward or backward, through any number of unoccupied squares, capturing enemy pieces by moving to occupy the square on which the enemy piece stands. If 8 rooks are randomly placed on a chess board, what is the probability that none of the rooks can capture any of the others? That is, what is the probability that no row or column contains more than one rook?

Solutions to any or all of the problems may be submitted to John Sheriff (D510). If no one is in the office, just put the solution under the door. Please include your name and student number. Students with correct solutions will be acknowledged and prizes will be awarded at the end of the year based upon performance during the year. Problems and solutions are available at <http://www.cs.uleth.ca/~sheriff/statistics/challenge.htm>.