

Exam 1 - Make-up Problems

1 Quick shot, part 1 - redux.

How many ways can you roll three distinguishable dice so the minimum number of the three is 1? Put differently, how many ways can you roll three distinguishable dice so at least one of them shows a 1?

2 Counting matrices - redux.

(a) How many $m \times m$ square matrices are there where each entry in the matrix is either 0 or 1?

(b) How many $m \times m$ 0/1 square matrices are there with the added condition that exactly one row consists of all zeroes or all ones?

(c) What is the probability that a $m \times m$ 0/1 square matrix has exactly one row consists of all zeroes or all ones? What happens to this probability as $m \rightarrow \infty$?