HW 2 (due Wednesday 9/16): Ch 2) 48, 49, 50, 51, 52, 61, 63 and Ch 3) 1, 8;

2.6 Finite probability

Suppose $E \subset S$, then the probability of $E = P(E) = \frac{|E|}{|S|}$

S = sample space, E = events.

Note: we assume each outcome is equally likely

Ex: A football season consists of 11 games. What is the probability that the season ends in 7 wins, 2 losses, and 2 ties, IF it is equally likely that the football team wins, looses, or ties.

The number of ways the season can end in 7 wins, 2 losses, and 2 ties is

The number of different ways in which the season can end is

Thus the probability that the season ends in 7 wins, 2 losses, and 2 ties is

Suppose you randomly place 5 rooks on an 8×8 chessboard in non-attacking position. Suppose 2 of the rooks are yellow and three are blue.

Number of ways to place 2 yellow rooks and 3 blue rooks on an 8×8 chessboard where a yellow rook is in the first row and first column =

Number of ways to place 2 yellow rooks and 3 blue rooks on an 8×8 chessboard =

Thus the probability that a yellow rook is in the first row and first column is

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What is the probability that a yellow rook is in the first row and second column.