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Balanced Non-Transitive Dice

Abstract for the Combinatorics Seminar 2011 September 6

Given dice A and B, we say A beats B if the probability of A's winning a random throw is greater than .5. It is possible for three n-sided dice labeled by the numbers 1 to 3n to have the property that A beats B, B beats C, and C beats A. There is a known upper bound on the probabilities, which need not all be equal. I will discuss how to make them equal and how to approach the upper bound. I will also discuss generalizations to four or more dice.
