

ECE 341 - Homework #1

Tree Diagrams and Enumeration.

1) Two teams, A and B, are playing a best of 5 game series.

- The series is over once one team wins 3 games.
- B starts with +1 point (odds)

Draw the tree diagram for all possible outcomes of the series.

2) List all possible combinations of rolling a 4-sided die (d4) and a 6-sided die (d6) (enumeration).

Also determine the probability $X \{1..6\}$ where X is the smallest of the two numbers.

Two players, A and B, are playing a game of dice.

- Player A rolls a d4 and a d6 and takes the smallest of the two numbers (i.e. problem #2)
- Player B rolls a 6-sided die and subtracts one (d6 - 1).

Player A wins on ties.

3) What is the conditional probability

- Player A wins given B's score is 3 (B rolled a 4)

4) What is the probability that player A will win any given game?

Enumeration & Farkle

Write a Matlab program to go through every combination of 6d6 and determine...

5) The odds of rolling 5-of-a-kind

dice = xxxxx a a not equal to x

6) The odds of rolling two tripples

dice = xxx yyy x and y different

Enumeration in 4-card Poker

7) In 4-card poker, you're dealt just 4 cards. Determine using enumeration the odds of being dealt 2-pair

hand = xx yy

8) Determine using enumeration the odds of being dealt one-pair

hand = xx y z