COMS 4701 Artificial Intelligence

Homework 3

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Question 1:

(a) A=6

(b) As long as max(C,D)<5, for example, C=D=2.

Question 2:

1: in the case chess, we assume that accuracy of the static evaluation increases with increasing search depth, and we want to maximize search depth and save time and space , depth-first iterative-deepening minimizes, at least asymptotically, time and space for any given search depth.

2: the amount of time required to search the next deeper level in the tree is not known when the ply begins, and the search ply may have to be aborted due to time constrains, and the complete search at the next shallower depth can be used to make the move.

3: the information from previous iterations of a DFID search can be used to order the nodes in the search tree so that alpha-beta cutoff is more efficient.

Question 3:

(a) TP:10, FP:20 FN:0 TN:70

(b) Precision. In this problem, only 1/3 of predict positive are really positive, and if I want to be more confident of my true positives, this can detect the poor prediction ability.