CSCE476/876 **Spring 2006**

Homework 7

Assigned on: Mon April 3, 2006.

Due: Fri Apr 7, 2006.

This is a pen-and-paper homework, to be returned in class
The whole homework is worth 30 points

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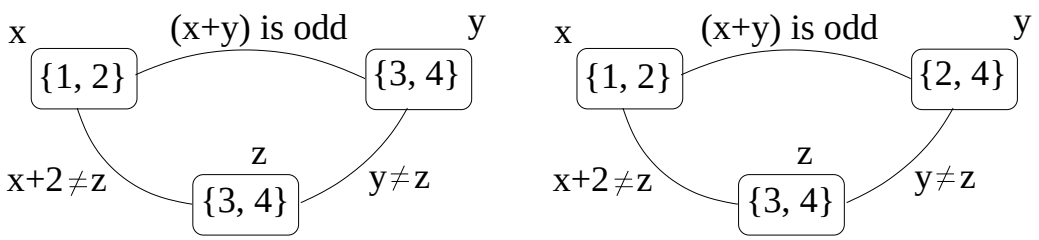
1. (6 points) Constraint propagation Consider the CSPs represented by the constraint networks below:



CSP I **CSP II**

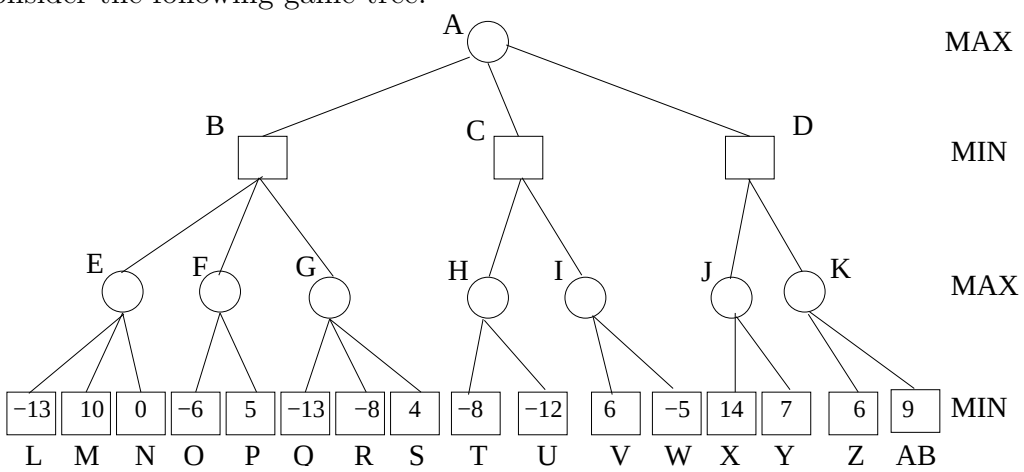
For each CSP, state whether or not the CSP is arc-consistent. If it is, explain why. If it is not, explain which domain must be reduced to make the CSP arc-consistent, and specify the constraint that can be used to reduce the domain.

(a) CSP I:

(b) CSP II:

2. **Alpha-beta search.** **(Total 8 points)**

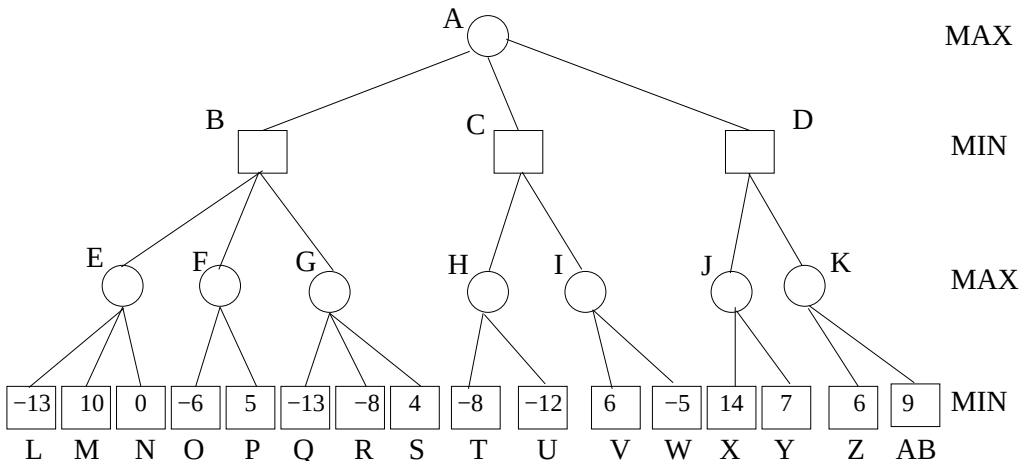
Consider the following game tree:



(a) Compute the minimax decision. Show your answer by writing the values at the appropriate nodes in the above tree. (Copy the tree in your homework.) (1 points)

(b) What move should Max choose? (1 points)

(c) Using the *alpha-beta pruning method*, with standard left-to-right evaluation of nodes, show how the method operates on (a copy of) the tree and list the nodes are *not* examined by alpha-beta. (6 points)



3. AIMA, Exercise 6.3, page 190. 10 points

4. AIMA, Exercise 7.5, page 237. 6 points