Quiz #3. Constraint satisfaction

Can we use backward search to solve the N-queens problem? Why?

What is the best uniformed search algorithm to solve the N-queens problem? Why?

Formulate a Constraint Satisfaction Problem.

What is a constraint?

Is constraint X≠Y, where domains of X and Y are {1,2}, arc consistent?

If arc (X,Y) is consistent, does it mean that arc (Y,X) is also consistent?

Why does not algorithm AC-3 add arc (j,i) back to queue after revising arc (j,i)?

When does the algorithm AC-3 stop? Formulate the stopping conditions and explain their meaning from the AC perspective.

What is the worst-case time complexity of procedure RM-Inconsistent-Values? Can you write faster procedure for constraint X < Y?

What is the lower-bound for worst-case time complexity of making the problem AC?

Explain the difference between forward checking and look ahead methods.

Is the following claim true? If the problem is arc consistent it has a solution.

Is the following claim true? If the problem is not arc consistent it has no solution.

Think about difference of local consistency and global consistency. Do you know any global consistency technique?

What is a global constraint?

Explain fail-first principle and give some particular instances of it.

What is the difference between backtracking and MAC?

Formulate (model) the Sudoku problem as a CSP.