CS221 Practice Midterm #1

Summer 2013

The following pages are excerpts from similar classes' midterms. The content is similar to our midterm – but I have opted to give you a document with more problems rather than one that follows the structure of the midterm precisely. See the midterm handout for more details on what the exam will look like. The midterm is 2 hours. It is open book and open computer but **closed** Internet.

1. [Short Answers] Truth Test (10 points)

For the following questions, a correct answer is worth 2 points, no answer is worth 1 point, and an incorrect answer is worth 0 points. Circle true or false to indicate your answer.

a. (true or false) If g(s) and h(s) are two admissible A* heuristics, then their average f(s) = ½ g(s) + ½ h(s) must alsobe admissible.

b. (true or false) For a search problem, the path returned by uniform cost search may change if we add a positive constant C to every step cost.

c. (true or false) The running-time of an efficient solver for tree-structured constraint satisfaction problems is linear in the number of variables.

d. (true or false) The amount of memory required to run minimax with alpha-beta pruning is O(bd) for branching factor b and depth limit d.

e. (true or false) For a discrete bayesian network with ***n*** variables, the amount of space required to store the "joint" distribution table is O(n).

f. (true or false) In a markov decision problem, there are no actions and instead everything is controlled by "chance."

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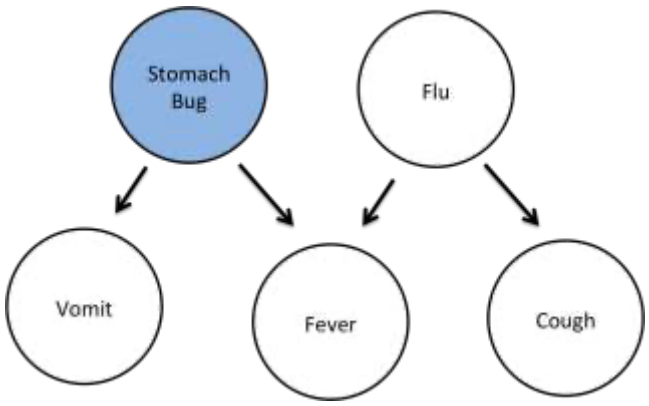
h. (true or false) Assume the Bayes Net from class is a prefect representation of the world:



You know that you *do not* have a stomach bug. If you were to vomit, would that information change the probability that you had a fever?