I. What types of representations do you know for automatically learned knowledge?
   a. 
   b. 
   c. 
   d. 
   e. 

II. Which of the following are HORN clauses?
   a) $B => A$
   b) $C \land D => B$
   c) $B \lor \neg C \lor \neg D$
   d) $B \lor \neg C \lor D$

III. Compare and Contrast backtracking over CSPs versus Partial Order Planning Algorithms.

IV. Write in first order logic:
   a) There exist at most two sheriffs.
      (can use: sheriffs(x))

   b) There exists a barber that shaves all the men in town that do not shave alone.
      (can use: barber(x), shave(x,y), man(x))

   c) AI comps are funny.
      (can use: funny(x), AI_comps(x))

   Note: you can also use in all cases: exists, for-all, not, and, or, =, (, ) and variables
V. Trace a simple forward inference engine over the next propositional logic database
r1: f1 -> f2
r2: f2, f3 -> f4
r3: f1, f4 -> f3
r4: f3, f4 -> f5
f1, f2, f3

<table>
<thead>
<tr>
<th>queue</th>
<th>facts</th>
<th>fired-rules</th>
<th>new-facts</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

VI. Mention qualitative relations you know between amount of available data and number of parameters recommended for classification algorithms in machine learning.