Homework 3
Due date: 9/16/04

1. Write negations of the following statements.
   
   (a) All women are teachers.

   (b) Nothing is certain.

   (c) Some of your contributions are deductible.

2. By forming disjunctions of the basic conjunctions (or vice versa), you can write statements with given truth tables. Complete the following truth table by finding appropriate statements.

   \[
   \begin{array}{c|c|c}
   p & q & \\
   \hline
   T & T & F \\
   T & F & F \\
   F & T & T \\
   F & F & F \\
   \end{array}
   \]
3. Here is an excerpt from an automobile insurance policy. “If the loss is $100 or less, we will not make any payment.” A policyholder suffers a $150 loss. What are the insurance company’s obligations? Explain!

4. Complete the following truth table.

<table>
<thead>
<tr>
<th>$p$</th>
<th>$q$</th>
<th>$p \land \sim q$</th>
<th>$\sim p \lor q$</th>
<th>$\sim (p \land \sim q)$</th>
<th>$\sim (p \lor q)$</th>
<th>$\sim (\sim p \land \sim q)$</th>
<th>$(p \land q) \lor (p \lor q)$</th>
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