The following are based on Chapter 34 of the textbook, on NP-Completeness.

1. (1 pt.)
   - This *quick check* is **closed book, notes, etc.**
   - You may use a *hand-written* 3 in. × 5 in. **reference card** as announced.
   - Use the **textbook's conventions** and terminology.

   Read the above carefully; then write your name below:

2. (4 pts.) The first two pages of the chapter list three pairs of problems such that the first problem in each pair is solvable in polynomial time while the second is NP-complete. List any two of those three pairs.

3. (3 pts.) Provide the definition of the decision problem PATH corresponding to the optimization problem SHORTEST-PATH.

4. (2 pts.) *Indicate true or false* for each:
   (a) PATH $\in P$?
   (b) PATH $\in NP$?
   (c) PATH $\in NPC$?