Homework Assignment #8
Due: May 12, 2009

8. Consider the DISJOINT-PATHS problem. The input is a directed graph and several pairs of nodes $(s_1, t_1), (s_2, t_2), \ldots, (s_k, t_k)$ and the problem is to determine whether there is a set of paths $P_1, P_2, \ldots, P_k$ such that P_i goes from s_i to t_i and no vertex of the graph appears in more than one of the P_i's. Prove that the problem is **NP**-complete.

Hint: If you want to use 3SAT, you can do it with one (s, t) pair for each variable and one for each clause.