Algorithms
Computer Science 140 & Mathematics 168
Instructor: B. Thom
Fall 2004
Homework 13a
Due on the day pigs fly.

1. **[10 Points] Professor Lai and NP!**

   (a) Professor I. Lai claims that if P_1 and P_2 are any two problems in NP such that $P_1 \leq_p P_2$, then $P_2 \leq_p P_1$. Prove that this would imply that $P = NP$.

   (b) Professor Lai is studying an interesting problem called the Polygon Intersection Testing problem (PIT). He claims to have proved that PIT is NP-complete by showing that PIT is in NP and that PIT $\leq_p$ VC (VC is the Vertex Cover problem). Is this a valid approach for proving that PIT is NP-complete? Explain.