Homework #3

Due Date: February 27, 2001 **Points**: 70

1. (*20 points*) Show that in Lamport's algorithm the critical section is accessed according to the increasing order of timestamps. (text, problem 6.7, p. 149)
2. (*20 points*) Show that in the Ricart-Agrawala algorithm, the critical section is accessed according to the increasing order of timestamps. (text, problem 6.5, part 1, p. 149)
3. (*30 points*) On p. 145, the text discusses the greedy strategy for Raymond's tree-based algorithm, and notes that it can cause starvation. Please give an example of the application of this algorithm to a situation in which the greedy strategy causes starvation, but the regular algorithm does not.

Extra Credit

4. (*30 points*) Does Maekawa's algorithm access the critical section according to the increasing order of timestamps? Either show that it does or provide a counterexample. (text, problem 6.5, part 2, p. 149)