CSE 550
Problem Set #3

Due: 4:30pm, Thursday, December 9, 2010

1. Debunk the following paper: Faloutsos, Faloutsos, and Faloutsos. On power-law relationships of the Internet topology. SIGCOMM 1999. Hint: consider measurement bias. This paper recently won the 2010 SIGCOMM Test in Time award, which is to say, you don't need to be correct to have influence.

2. Can transient loops occur with BGP, if no BGP route advertisement messages are ever lost, no routers fail, and the routing policy is never changed? Explain why or why not.

3. In the proposer's algorithm in Paxos, under what circumstances is it safe to send an accept request, without waiting for all the prepare replies to arrive? Are there circumstances where it would be safe (satisfy P2b) to propose a value different from the one in the prepare reply with the highest numbered proposal? Are there circumstances where it would be safe to propose a value different from each of the values returned in prepare replies?