

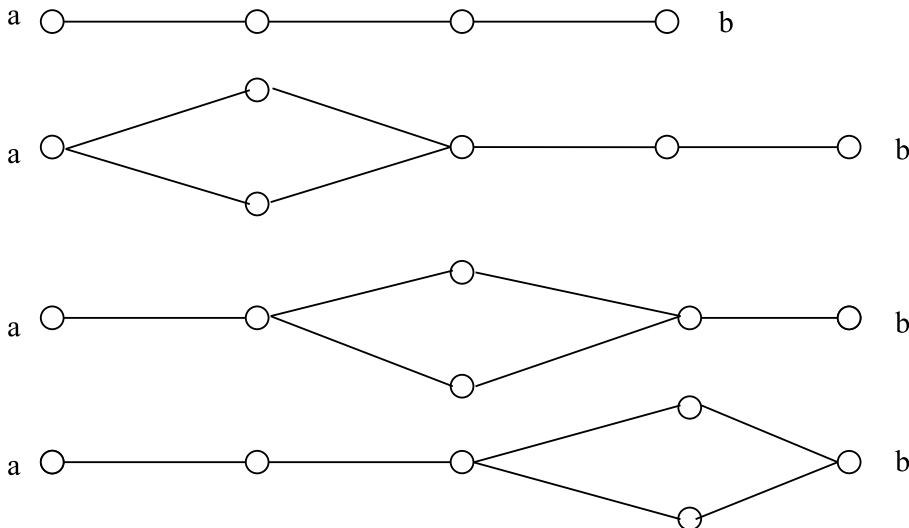
CS485 Spring 2007

Homework 9

Due Date: March 28 2007

NOTE: To speed up homework grading, please submit each homework problem on a separate sheet of paper, with you name and NetID on the top. Thank you!

1. What is the escape probability for each of the following four graphs?



2. Calculate a lower bound on the escape probability for a walk on a 3-dimensional lattice.
3. What is the analogy between quantities in electrical circuits and quantities having to do with random walks on undirected graphs?
4. Suppose you are interested in an escape probability in a complicated graph G , i.e. the probability of a random walk starting at a reaching b before return to a . How would a simple approximation to G look like that would be sufficient to calculate it? *Hint:* think of the effective resistance analog.