

Homework 2 for CSE/EE 461 (Autumn 2001; Wetherall)

Due: Wed, Nov 14, 2001, at the beginning of class. (Out: Mon, Oct 29, 2001.)

Note: be sure to show how you derived answers so that you are eligible for partial credit.

1. Learning Bridges. Peterson 3.16 a), b)

- c) Suppose that there are now three bridges, B1, B2, B3 joining the two LANs. Describe what happens when M sends to L.

2. Spanning Trees. Peterson 3.12

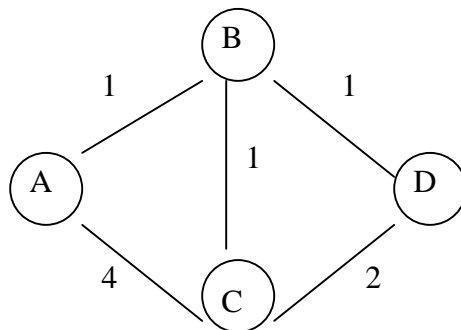
3. Distance Vector. Peterson 4.12 a), b), c)

- d) How many further iterations are needed before all routing tables are stable?
e) For any network, describe how many iterations are needed before all of the routing tables are stable. Give your answer in terms of the properties of the network graph.

4. Split Horizon with Poison Reverse. (From Keshav 11.5)

Consider the network shown with stable routes. Now assume link BA goes down so that B routes to A through C. If B uses split horizon with poison reverse, it will report to C an infinite distance to A, since B uses C to reach A. Similarly, D also reports to C an infinite distance to A. Now, suppose that link CA goes down.

- a) What distance to A will C report to B and D?
b) What is the distance to A that D reports to B?
c) What does B think the shortest path to C is?
d) What does B now tell C about its distance to A?
e) What is C's route to A now?
f) What does C tell D?
g) When does this cycle end?



5. Dijkstra's Algorithm. Peterson 4.22

6. ARP Peterson 4.11

7. Route Aggregation. Peterson 4.39

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