Homework assignment

1. Consider routing in a network with 180 routers, and on average every router is connected to 5 other routers. Routing information is exchanged every 120 msec. How much network bandwidth is used under link-state and distance vector routing to exchange this information. Assume sequence numbers are used to damp flood packets for link-state. Please explain any assumptions you make about the size of routing table entries.
   - 6 pts

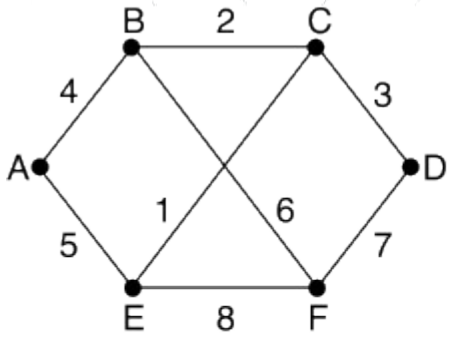
2. How can flooding and broadcast be said to be similar to each other? How do they differ? Name *one* way in which they are similar/different.
   - 2 pts

3. Split horizon does not always help in avoiding the count-to-infinity problem. Illustrate a case where it fails (make routing tables - show 2 iterations).
   - 2 pts

Homework assignment 2

Exercise 7.

Consider the network of Fig. 5-12(a). Distance vector routing is used, and the following link state packets have just come in at router D: from A: (B: 5, E : 4); from B: (A:4, C: 1, F: 5); from C: (B: 3, D: 4, E: 3); from E: (A: 2, C: 2, F : 2); from F : (B: 1, D:2, E: 3). The cost of the links from D to C and F are 3 and 4 respectively. What is D's new routing table? Give both the outgoing line to use and the cost.



(a)

Link State Packets

A		B		C		D		E		F	
Seq.		Seq.		Seq.		Seq.		Seq.		Seq.	
Age		Age		Age		Age		Age		Age	
B	4	A	4	B	2	C	3	A	5	B	6
E	5	C	2	D	3	F	7	C	1	D	7
		F	6	E	1			F	8	E	8

(b)

Figure 5-12. (a) A network. (b) The link state packets for this network.