1. (50 points) Consider the network shown in the figure. Suppose all nodes run **the Link State routing protocol and the Dijkstra's algorithm**. Assume that the **tiebreaker** goes to the node with a smaller ID in the alphabetical order (e.g., A is smaller than C, and E is smaller than F, and so on.)
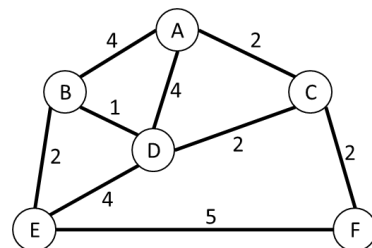
    a) (30 points) Show step by step (as we did in class) how **source node B** computes its shortest paths to all other nodes in the network, by completing the following iteration table.

Iteration	N	H_{BA}; D_{BA}	H_{BC}; D_{BC}	H_{BD}; D_{BD}	H_{BE}; D_{BE}	H_{BF}; D_{BF}
Initial						

    b) (20 points) After the network stabilizes, show **node B's** H, D, and C lists.

2. (50 points) Consider the same network as in the previous problem. Suppose all nodes instead run **the Distance Vector routing protocol with SHPR (Split Horizon with Poisoned Reverse)**. Again, assume that the **tiebreaker** goes to the node with a smaller ID in the alphabetical order.

    a) (20 points) Show step by step (as we did in class) how to find the shortest path from each node to **destination node B**, by completing the following iteration table.

	Iteration	A	C	D	E	F
	Initial					
Destination						
Node B						

    b) (30 points) After the protocol converges, (i) what is the Distance Vector report that A sends to B? (ii) what is the Distance Vector report that D sends to B? (iii) what is the Distance Vector report that E sends to B? Justify your answers.