1

V (State Graph) = {Oregon, Alaska, Texas, Hawaii, Vermont, New York, California}

E (State Graph) = {(Alaska, Oregon), (Hawaii, Alaska), (Hawaii, Texas), (Texas, Hawaii), (Hawaii, California), (Hawaii, New York), (Texas, Vermont), (Vermont, California), (Vermont, Alaska)}
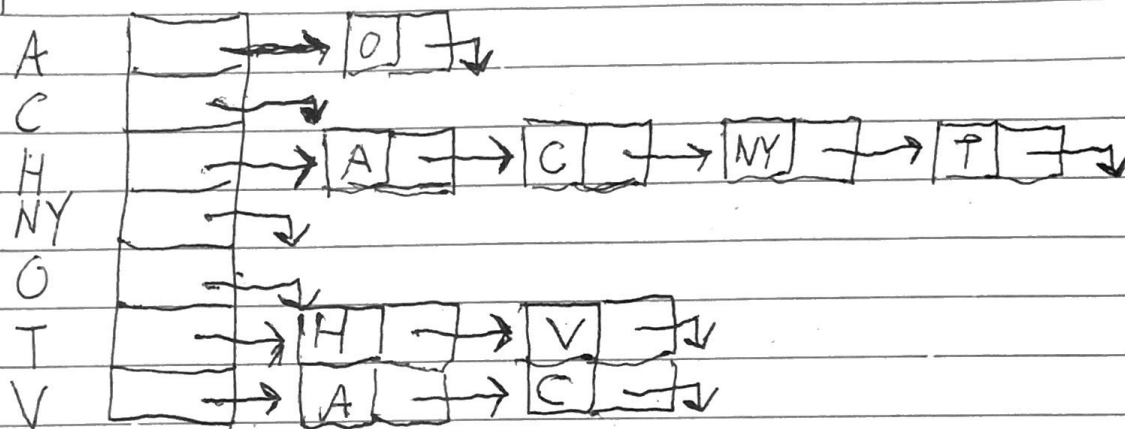
2

    a. No

    b. yes

    c. Texas

3

States

a.

	0	1	2	3	4	5	6
A	0	0	0	0	1	0	0
C	0	0	0	0	0	0	0
H	1	1	0	1	0	1	0
NY	0	0	0	0	0	0	0
O	0	0	0	0	0	0	0
T	0	0	1	0	0	0	1
V	1	1	0	0	0	0	0

b.

4. a. (C)

b. (A)

5. Atlanta - Washington : 600

Alanta - Housten : 800

Atlanta - Dallas : 1900

Atlanta - Austin : 2100

Atlanta - Denver : 2680

Atlanta - Chicago : 2800

6. • add 0 to minimal spanning tree
   • 3 and 7 are edges, choose smallest; which is 3
   • add 2 to minimal spanning tree
   • 1 and 8 are edges, choose smallest, which is 1
   • add 5 to minimal spanning tree, choose smallest
   between edges 2, 5, 7 , choose 2 and add
   1 to tree
   • choose smallest between edges 7 and 5
   • 5 is smaller, add 3 to tree
   • choose smallest between edges 6 and 3
   • 3 is smallest, add 4 to tree

7.

0 - 2 (3)
2 - 5 (1)
1 - 5 (2)
4 - 5 (3)
1 - 3 (5)
3 - 4 (6)
0 - 1 (7)
2 - 4 (8)

8.

Minneapolis / St. Paul

270

Madison

80

Milwaukee

95

Chicago

270

St. Louis