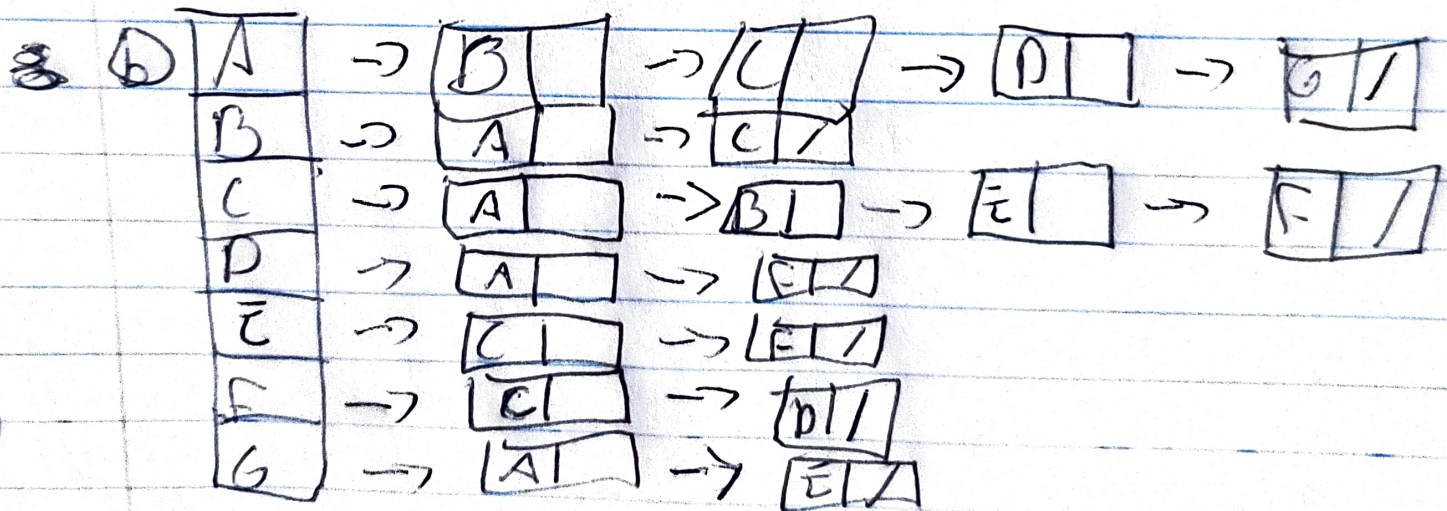


- ② (a) no
 (b) yes
 (c) Texas

③ ①

Alaska	0	0	0	0	1	0	0
California	0	0	0	0	0	0	0
Hawaii	1	1	0	1	0	1	0
NY	0	0	0	0	0	0	0
Oregon	0	0	0	0	0	2	0
Texas	0	0	1	0	0	0	1
Vermont	1	1	0	0	0	0	0



④ (a) $D = E G A D F C B$

(b) BFS traversal are a, b, & c

⑤ (a) Atlanta \rightarrow Houston = 800

(b) Atlanta \rightarrow Washington = 600

(c) Atlanta \rightarrow Dallas = $600 + 1300 = 1900$

(d) Atlanta \rightarrow Denver = $600 + 1300 + 780 = 2680$

(e) Atlanta \rightarrow Chicago = $600 + 1300 + 900 = 2800$

(f) Atlanta \rightarrow Austin = $600 + 1300 + 200 = 2100$

⑥ Step 1: (0)

Step 2: (0) (3, 7)

3
②

Step 3: (0) (5) (1, 8)

3
②

Step 4: (0) (1) (3, 2)

3 1
②

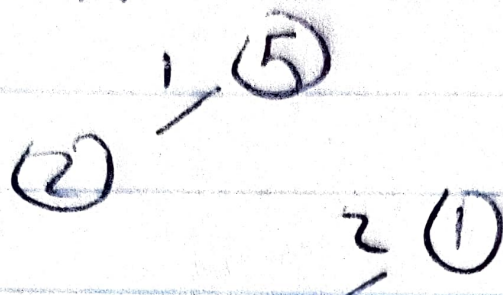
Step 5: (0) (1) (5, 7)

3 1 (5) 5
② (3)

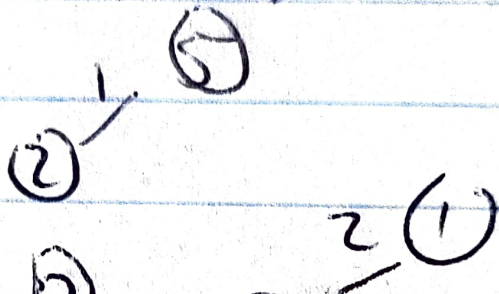
Step 6: (0) (1) (5, 6)

3 1 (5) 5
② (4) 6

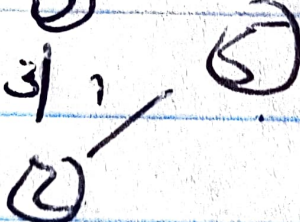
⑦ step 1:



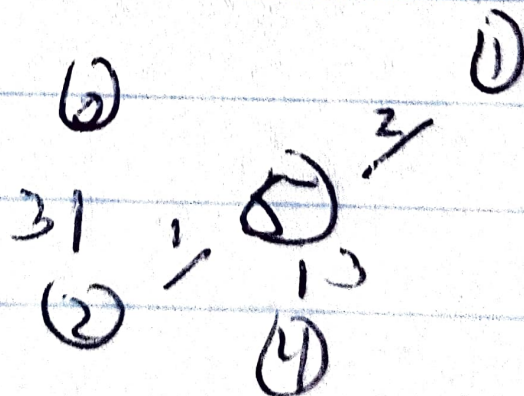
step 2:



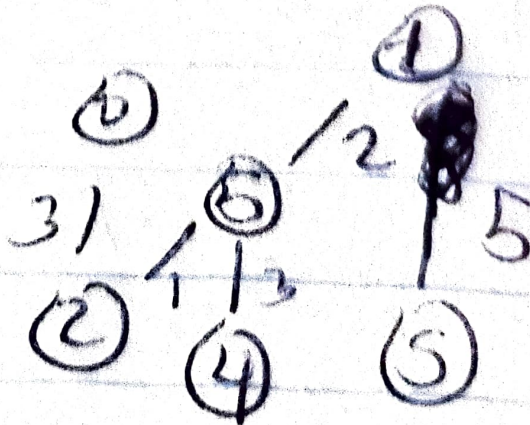
Step 3:



step 4:



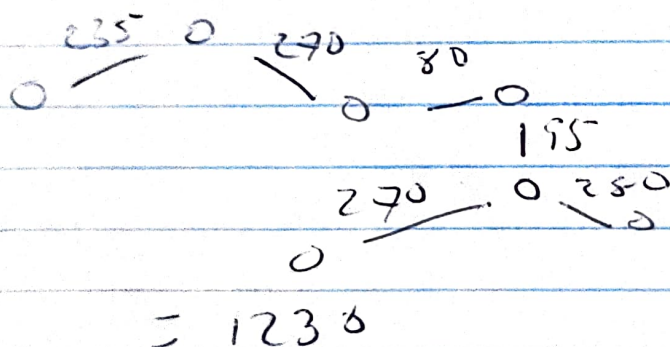
Step 5:



④ step 1:

E1	(Madison, Milwaukee)	80
E2	(Milwaukee, Chicago)	95
E3	(Madison, Chicago)	150
E4	(Des Moines, Min. Station)	235
E5	(St. Louis, Chicago)	270
E6	(Minneapolis, St. Paul, Madison)	270
E7	(Chicago, Detroit)	280
E8	(Des Moines, St. Louis)	320

step 2:



④ step 1:

Indegree	0 = 0	5 = 2
	1 = 1	6 = 11 = 2
	2 = 1	7 = 0
	3 = 4	8 = 2
	4 = 211 = 3	9 = 2

Step 2: Pick vertex w/ indegree 0, we pick indegree 0

Step 3: Queue all nodes with 0 indegree

Step 4: repeat: Remove front node, Repeat for neighbor M of N.

Indegree(M): Indegree(M) - 1

if Indegree(M) = 0, then add M to queue

Step 5: exit

~~Q~~ ④ Continuation)

0 7

0 7 1

0 7 1 2 5 6

0 7 1 2 5 6 4

0 7 1 2 5 6 4 8

0 7 1 2 5 6 4 8 3

0 7 1 2 5 6 4 8 3 9

⑩ Start
Discrete Math
Programming 1
Programming 2
Computer Organization
Algorithms
High-level languages
Operating systems
Theory Compilation
Senior Seminar
Compilers
End