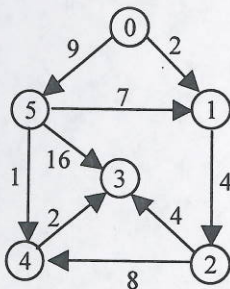


Graph Algorithms(15 points)

7. a. What is the distance of the shortest path from node 0 to node 2 in the graph immediately below? (1 point) 6

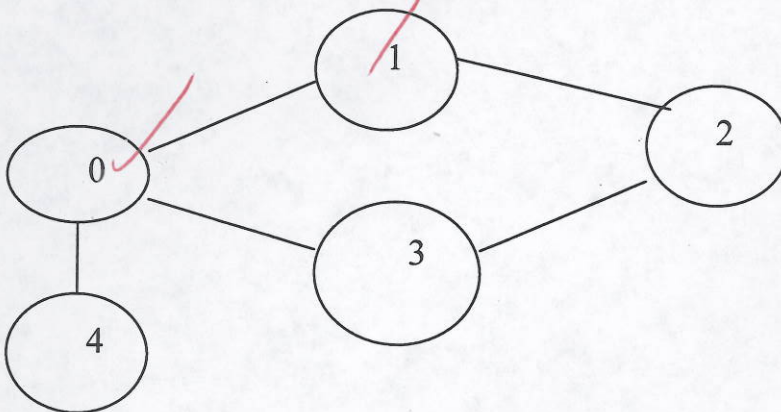
b. Draw the contents of the distance array for each iteration of Dijkstra's Algorithm as it works on this graph (circle the index of each allowed vertex at each step). The initial state is given. (5 Points)



0	0	2	?	?	?	9
	0	1	2	3	4	5
1	0	2	6	?	?	9
	0	1	2	3	4	5
2	0	2	6	10	14	9
	0	1	2	3	4	5

3	0	2	6	10	10	9
	0	1	2	3	4	5
4	0	2	6	10	10	9
	0	1	2	3	4	5
5	0	2	6	10	10	9
	0	1	2	3	4	5

c. Draw an adjacency matrix representation for the following graph. (2 points)



	0	1	2	3	4
0	0	1		1	1
1	1	0	1		
2		1	0	1	
3	1		1	0	
4	1				0

d) Draw an adjacency list representation of the graph shown immediately above. (2 Points)

0 ~ 1 ~ 3 ~ 4
1 ~ 0 ~ 2
2 ~ 1 ~ 3
3 ~ 0 ~ 2
4 ~ 0