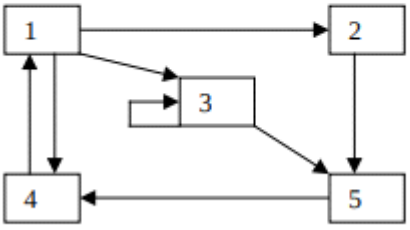
HW18a - 4.7

Wednesday, March 29, 2023 6:24 PM

3. Assuming Warshall's algorithm uses node 1 for its first pivot and node 2 as its second pivot, give the adjacency matrix after the first two iterations, i.e. after using both node 1 as a pivot and node 2 as a pivot.



Starting Matrix

	1	**2**	**3**	**4**	**5**
1		1	1	1	
2					1
3			1		1
4	1				
5				1	

After First Iteration, using (1) as pivot

	1	**2**	**3**	**4**	**5**
1	-	1	1	1	-
2	-	-	-	-	1
3	-	-	1	-	1
4	1	**1**	**1**	**1**	-
5	-	-	-	1	-

a[4][1] && a[1][2] => a[4][2]
a[4][1] && a[1][3] => a[4][3]
a[4][1] && a[1][4] => a[4][4]

After Second Iteration, using (2) as pivot

	1	2	3	4	5
1	-	1	1	1	1
2	-	-	-	-	1
3	-	-	1	-	1
4	1	1	1	1	1
5	-	-	-	1	-

a[1][2] && a[2][5] => (1,5)
a[5][2] && a[2][5] => (4,5)