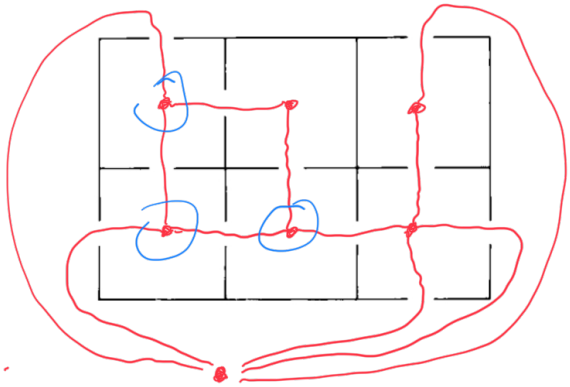
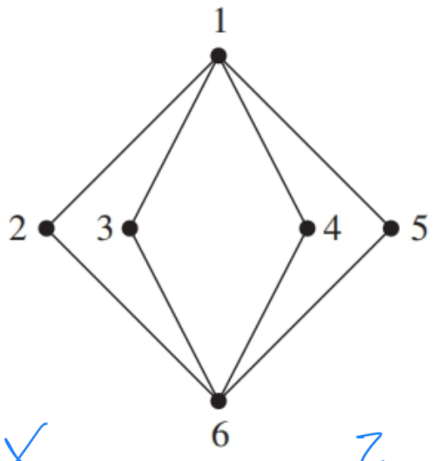
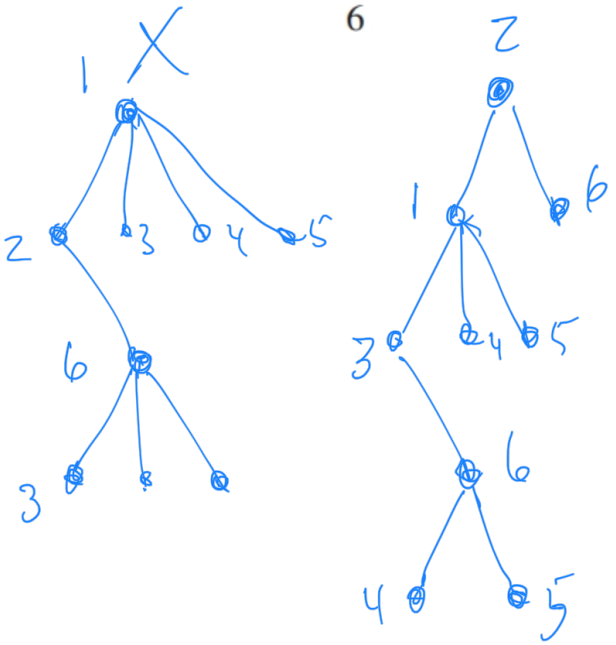
32. Is it possible to walk in and out of each room in the house shown in the following figure so that each door of the house is used exactly once? Why or why not?



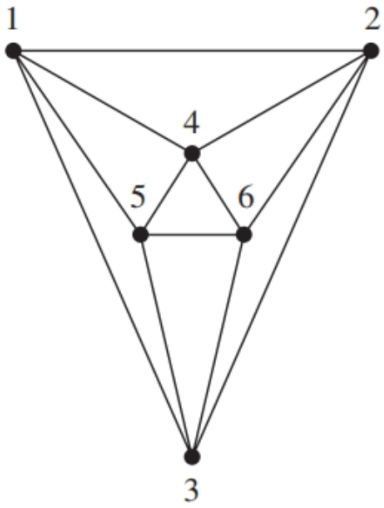
For Exercises 21–28, decide by trial and error whether Hamiltonian circuits exist for the graphs of the given exercise. If so, list the nodes in such a cycle.

3.





4.



PRACTICE 12 Trace Dijkstra's algorithm on the graph shown in Figure 7.10. Show the values for p and IN and the d values and s values for each pass through the **while** loop. Write out the nodes of the shortest path and the distance of the path.

Looking for shortcuts;

$d(i,k) + d(k,j) < d(i,j)$

arrival

Adjacency Matrix:

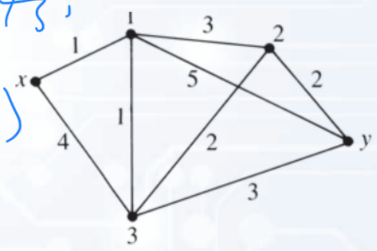


Figure 7.10

	x	1	2	3	y
x	0	1	∞	4	∞
1	1	0	3	1	5
2	∞	3	0	2	2
3	4	1	2	0	3
y	∞	5	2	3	0

Depart x

	x	1	2	3	y
x	0	1	4	2	~~6~~ 5
1	1	0	3	1	~~5~~ 4
2	4	3	0	2	2
3	2	1	2	0	3
y	~~6~~ 5	~~5~~ 4	2	3	0

	x	1	2	3	y
x	0	1	~~∞~~ 4	~~4~~ 2	~~∞~~ 6
1	1	0	3	1	5
2	∞	3	0	2	2
3	4	1	2	0	3
y	∞	5	2	3	0

	x	1	2	3	y
x	0	1	∞	4	∞
1	1	0	3	1	5
2	∞	3	0	2	2
3	4	1	2	0	3
y	∞	5	2	3	0

	x	1	2	3	y
x	0	1	∞	4	∞
1	1	0	3	1	5
2	∞	3	0	2	2
3	4	1	2	0	3
y	∞	5	2	3	0