CSE 373 – Data Structures
Homework 7

Assigned:	Wednesday, May 29, 2002
Due:	Wednesday, June 5, 2002
	At the start of class

Remember:

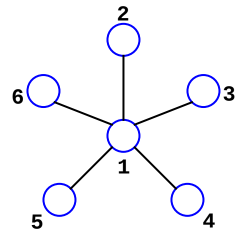
- Attach a copy of the two dot files
- Attach a copy of the two graphs
- Attach a copy of your turnin receipt
- Do a web turnin of graph.c.

Your name: ______________________________

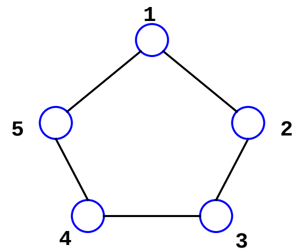
Student number: ______________________________

1. Write down the adjacency matrix for the following graphs.

a.

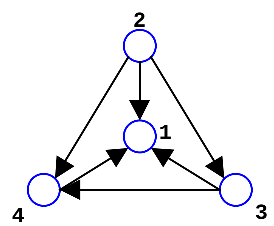


b.

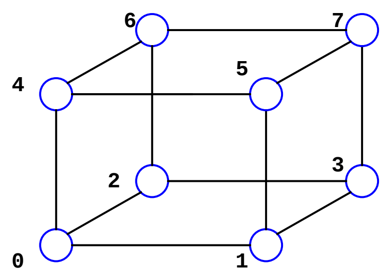


2. Write down the adjacency lists for the following graphs. Don't worry about implementation details, just show how many lists there would be and what the lists would contain for values.

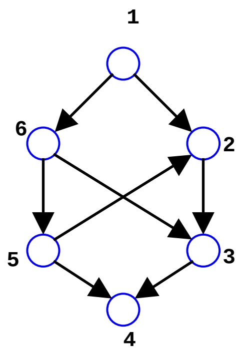
a.



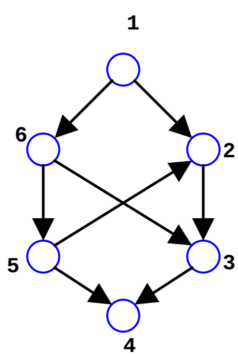
b.



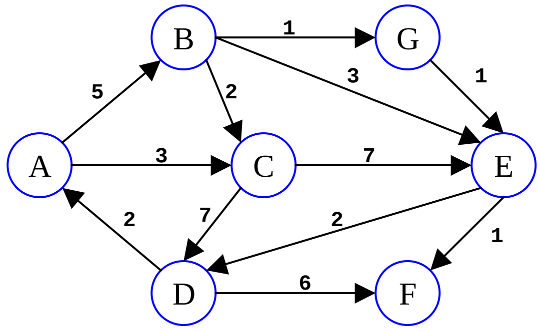
3. Draw the spanning tree that results when you start at node 1 of the following graph and apply the Breadth First Search algorithm as outlined on slide 5 of the lecture on Minimum Spanning Trees (29-May). Assume that you always follow the edge to the lower numbered node first. Show the path lengths for each node.



4. Draw the spanning tree that results when you start at node 1 of the same graph and apply the Depth First Search algorithm as outlined on slide 8 and following of the lecture on Minimum Spanning Trees (29-May). Assume that you always follow the edge to the lower numbered node first. Show the path lengths for each node.



5. Using Dijkstra's algorithm, find the shortest path from A to all the other vertices for the following graph.



a. Show your work in the table provided.

	$S?$	d_v	P	$S?$	d_v	P	$S?$	d_v	P	$S?$	d_v	P	$S?$	d_v	P	$S?$	d_v	P	$S?$	d_v	P
A	*	0	–	*	0	–	*	0	–	*	0	–	*	0	–	*	0	–	*	0	–
B																					
C																					
D																					
E																					
F																					
G																					

b. Using the results you found in (a), redraw the graph, showing only the shortest paths from A to each of the other nodes.