

CS 200 Algorithms and Data Structures

Written Assignment #5

Due on Apr. 30 at the beginning of the class

[Problem 1] 10pts

For the Figure A, use DFS to traverse the graph beginning with vertex b.
For the Figure A, use BFS to traverse the graph beginning with vertex b.

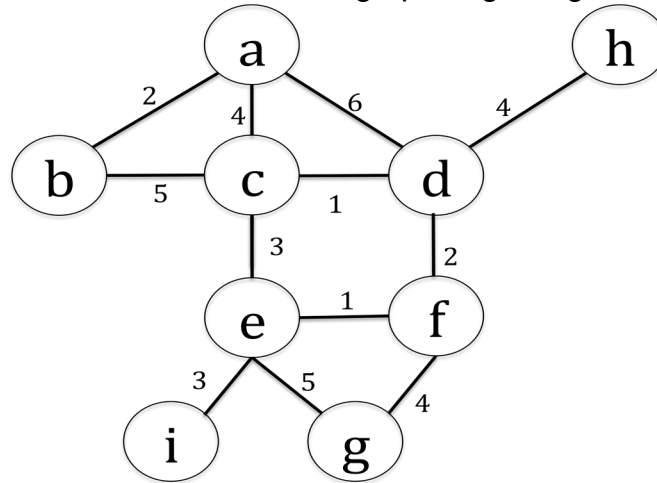


Figure A

[Problem 2] 10pts

- Draw the minimum spanning tree for the graph in Figure B when you start with vertex e.
- Draw the minimum spanning tree for the graph in Figure B when you start with vertex d.

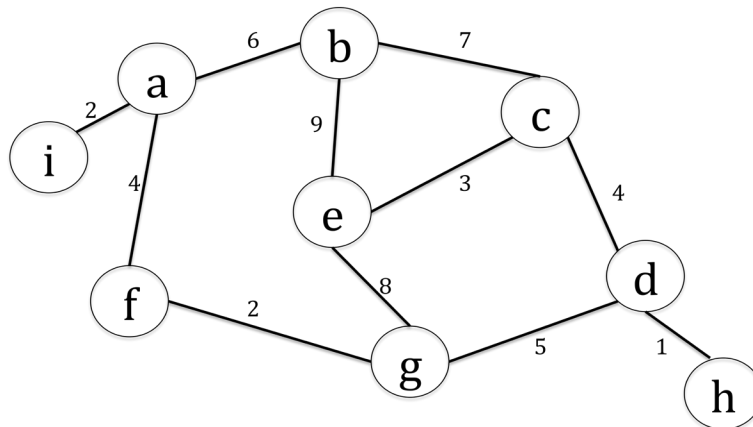


Figure B

[Problem 3] 5pts

Trace the shortest-path algorithm for the graph in Figure C, letting vertex 0 to be the origin.

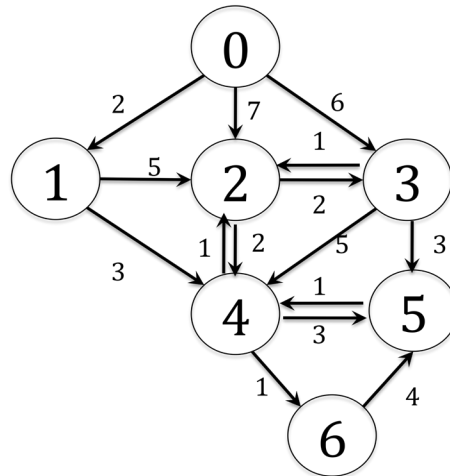


Figure C

[Problem 4] 5pts

Prove that a graph-traversal algorithm visits every vertex in the graph if and only if the graph is connected, regardless of where the traversal starts.