CS200 Quiz 10: More Graphs (11/20/08)

1. [Circle one] A graph traversal algorithm stops when:
   a. it first encounters the designated destination vertex
   b. it has visited all the vertices that it can reach
   c. it has visited all the vertices
   d. it has visited all the vertices and returned to the starting vertex

2. [Circle one] An adjacency matrix implementation of a graph:
   a. can only be used for sparse matrices.
   b. requires only a 2-D array.
   c. is less efficient for determining whether an edge exists between 2 vertices.
   d. puts a 1 or a weight in an entry to indicate the edge between two vertices.

3. [Circle one] For the graph “above”, Dijkstra’s would expand the nodes as:
   a. a,c,b,d,e,f
   b. a,b,c,e,f,d
   c. a,b,c,d,e,f
   d. a,c,b,e,d,f

4. [Circle all that are true] The DFS algorithm
   a. uses a stack.
   b. must be iterative.
   c. backtracks after all vertices adjacent to the current one have been visited.
   d. requires an undirected graph.

5. [Circle all that are true] Dijkstra’s algorithm
   a. has worst case complexity of $O(v^e)$
   b. requires a graph with non-negative edge weights.
   c. can use a priority queue to keep track of the next vertex to visit.
   d. updates the distance to a vertex when it finds an alternate, cheaper path.