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Assignment 7
Questions

1. How is the graph stored in the provided code -- adjacency matrix or edge list?
The graph is stored in the provided code as an edge list.

2. Which of the graphs are connected? How can you tell?

Graphs 1, 2, 4 and 5 are connected. They are connected because there is a path between any two pair of vertices.

3. Imagine that we ran each search in the other direction (from destination to source, instead of source to destination) -- would the output change at all? What if the graphs were *directed* graphs?

For undirected graphs like the ones we have, the output would not change it all. However, if the graphs were directed graphs, the results could have been different.

4. What are a few pros and cons of DFS vs. BFS?

DFS pros:
-can get lucky and find solution very quickly
DFS cons:
-can take a bad route and have to backtrack a long way, multiple times.
-can get stuck in infinite path
BFS pros:
-will always find solution
-guaranteed to find a path containing the least steps from start to goal
-will not get stuck in an infinite path
BFS cons:
-might not find solution quickly
-may take up more space because it looks at all path of a certain length at once

5. What's the Big O execution time to determine if a node is reachable from another node?

The execution time for both BFS and DFS is O(V+E), where V is the set of all vertices and E is the set of all edges. The maximum between vertices and edges – whatever dominates.