Problem 1. Consider the following graph (8 nodes and 10 edges). This is a the dark smart structure.

Using a prime tree, structure a spanning tree for this given graph using a breadth-first queue. Clearly select nodes and its visited order 1, 2, 3, and so on from A.

Using a prime tree, structure a spanning tree for this given graph using a breadth-first queue. Identify marked nodes and its visited order 1, 2, 3, and so from A.

Using the given graph, structure a spanning tree for this given graph using a breadth-first queue. Identify marked nodes and its visited order 1, 2, 3, and so from A.
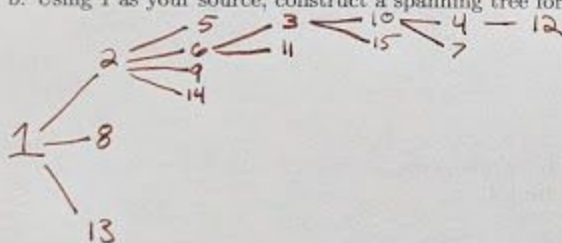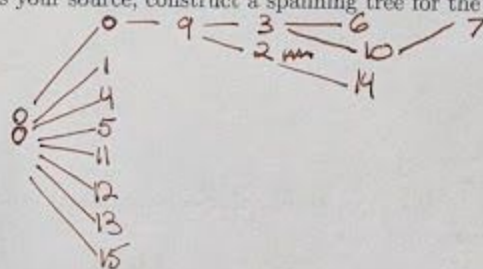
Problem 2. Consider the following graph

a. Using 0 as your source, construct a spanning tree for the given graph using a depth-first process.
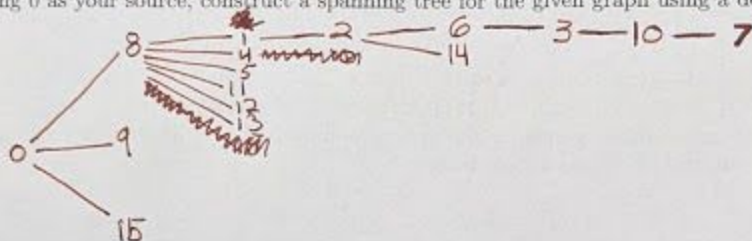
b. Using 1 as your source, construct a spanning tree for the given graph using a depth-first process.

c. Using 8 as your source, construct a spanning tree for the given graph using a depth-first process.

Problem 3. (Bonus) Implement a breadth and/or depth first search to determine all of the vertices/nodes that can be reached starting at 0 (or general i). Return a list of visited vertices as well as a data structure to that encodes the resulting tree.