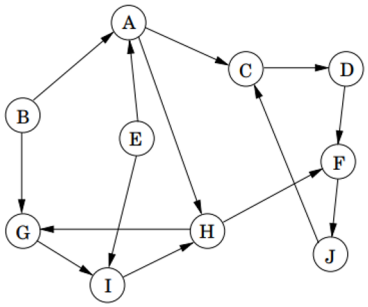
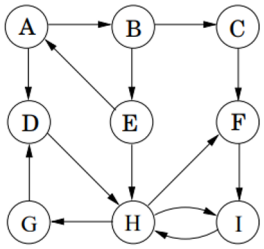
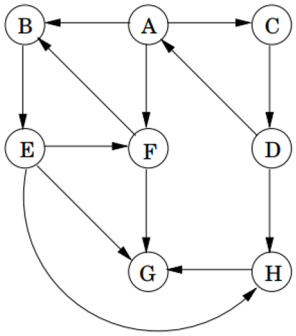
CSCI 2300 — Introduction to Algorithms
Lab 2 (document version 1.0) — January 22, 2020
Graphs and Breadth-First Search (BFS)

- This lab has three checkpoints that are to be completed by the end of your assigned lab section, two of which are shown below. The third checkpoint will be announced at the beginning of your lab. Show your code and results to a TA or mentor to receive credit. **Do not leave your lab section until you are checked off.**
- This lab is to be completed **individually**. Do not share your work or code with anyone else.
- You can use any programming language that you like; we suggest Python, C++, or C.
- For all of our labs, please avoid using Google to find suggestions or solutions. The goal is to use your own brain to work these problems out, which will help you develop the skills to do well on the exams and, more importantly, become a substantially better computer scientist.

1. Walk through the BFS algorithm starting from node A in the graphs below. Repeat but start from node G. Show, in detail, each iteration of the algorithm.







2. DPV Problem 3.8(a-b) – For part (b), use BFS.

   Repeat this problem with the goal of determining whether you can leave exactly 5 pints in either of the two larger containers.

   Repeat again, this time determining whether you can leave exactly 5 pints in both of the two larger containers.