

CS152: Data Structure
Week 13 - Graphs Worksheet (A)

Write the full name of all collaborators inside this box

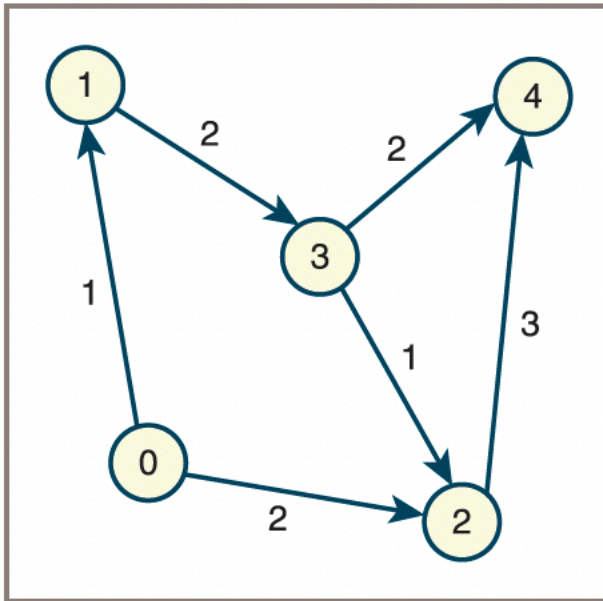
Discuss these questions and write your answers in the space provided below it.

1. The course prerequisites for a computer science major at a local college are numbered as follows: 111 is required for 112 and 210; 112 is required for 312, 313, 209, and 211; and 210 is required for 312. Draw a directed graph that represents this numbering structure.

2. a) How many edges are in a **complete, undirected** graph with six vertices?

2. b) Draw a graph that represents the description in 2a above.

3. Make a table showing the **adjacency matrix** for the following directed graph with edge costs.



4. Draw a picture showing the **adjacency list** for the above-directed graph with edge costs. You should assume that the edges in a list are ordered from least cost to greatest cost.

5. State one advantage and one disadvantage of the adjacency matrix representation and the adjacency list representation of graphs.