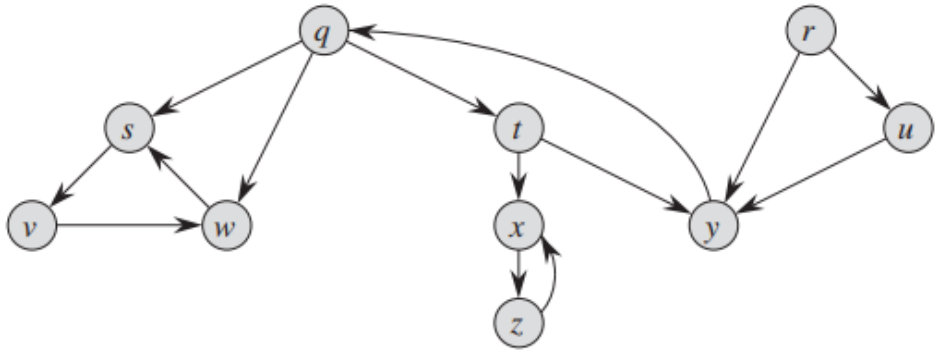
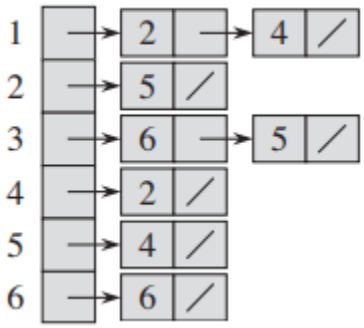
**Graph Exercises**

1) Write the adjacency matrix and adjacency list representation of the following directed graph.




2) Draw the meta-graph of the following adjacency list representation of a directed graph.




3) In an adjacency list representation, find if there is a path from *v* to *w*.

4) Write a method that accepts two parameters, the adjacency list representation of a directed graph and a vertex of the graph. Return a hash map that shows the shortest distance from the given vertex to any other vertex of the graph. Don't return the unreachable vertices.

5) If we have a graph of integer values (adjacency list) find the sum of all vertices in the graph.