Introduction.

Concepts & Notation

- Sec. 1.1: $S(n)$, $n$-tuple, $n$-set, vertices, edges, graph, digraph, adjacent, incident, neighbors.
- Sec. 1.2: weighted graph, multi-graph, degree, in-degree, out-degree.
- Sec. 1.3: simple graph.

Problems

Let $G$ be the above graph. Find the following:

1. List the vertex and edge sets of the graph.

2. For each vertex, list all vertices that are adjacent to it.
3. Which vertex or vertices have the largest number of adjacent vertices? Similarly, which vertex or vertices have the smallest number of adjacent vertices?

4. If all edges of the graph are removed, is the resulting figure still a graph? Why or why not?

5. If all vertices of the graph are removed, is the resulting figure still a graph? Why or why not?