Q 1: Give the adjacency matrix for each of the following graphs, and draw those graphs.

G1: $V = \{1, 2, 3, 4, 5, 6\}$ and
$E = \{\langle 1, 2\rangle, \langle 1, 3\rangle, \langle 1, 4\rangle, \langle 2, 5\rangle, \langle 2, 6\rangle, \langle 3, 5\rangle, \langle 3, 6\rangle, \langle 4, 5\rangle, \langle 4, 6\rangle\}$

G2: $V = \{1, 2, 3, 4, 5\}$ and
$E = \{\langle 1, 2\rangle, \langle 1, 4\rangle, \langle 2, 3\rangle, \langle 2, 4\rangle, \langle 2, 5\rangle, \langle 3, 4\rangle, \langle 3, 5\rangle\}$

For the graph G1, the neighborhood of vertex 1, N(1) = _____

the degree of vertex 1 is _____

Draw the subgraph induced by the vertices {1, 2, 4, 5}

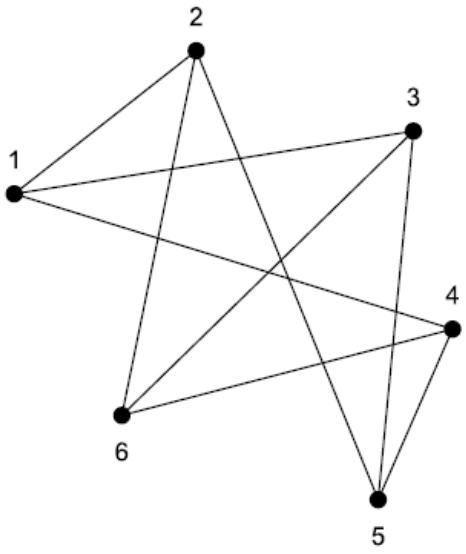
Q 2: Consider the following two graphs:

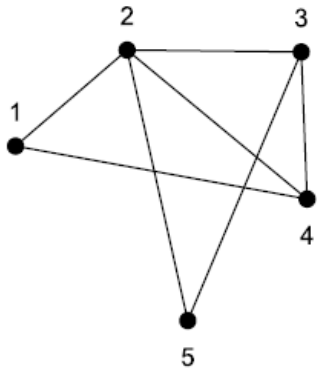
G1: $V = \{1, 2, 3, 4, 5, 6\}$ and
$E = \{\langle 1, 2\rangle, \langle 1, 3\rangle, \langle 1, 4\rangle, \langle 2, 5\rangle, \langle 2, 6\rangle, \langle 3, 5\rangle, \langle 3, 6\rangle, \langle 4, 5\rangle, \langle 4, 6\rangle\}$

G2: $V = \{1, 2, 3, 4, 5\}$ and
$E = \{\langle 1, 2\rangle, \langle 1, 4\rangle, \langle 2, 3\rangle, \langle 2, 4\rangle, \langle 2, 5\rangle, \langle 3, 4\rangle, \langle 3, 5\rangle\}$

For each graph, check whether it is (1) bipartite, (2) complete, (3) complete bipartite, (4) complete nonbaprtite.

Q 3: Draw the complement of the following two graphs:





Q 45: Test whether [5, 4, 3, 3, 3, 3, 3, 2] is graphic. If it is graphic, draw a simple graph with this sequence as the degree sequence.

Q 46: Test whether [6, 6, 5, 4, 3, 3, 1] is graphic.

Give an example of a complete graph with 5 vertices.

Give an example of a 3-regular graph.

Give an example of a bipartite graph with 6 vertices

Give 2 examples of complete bipartite graphs with 5 vertices