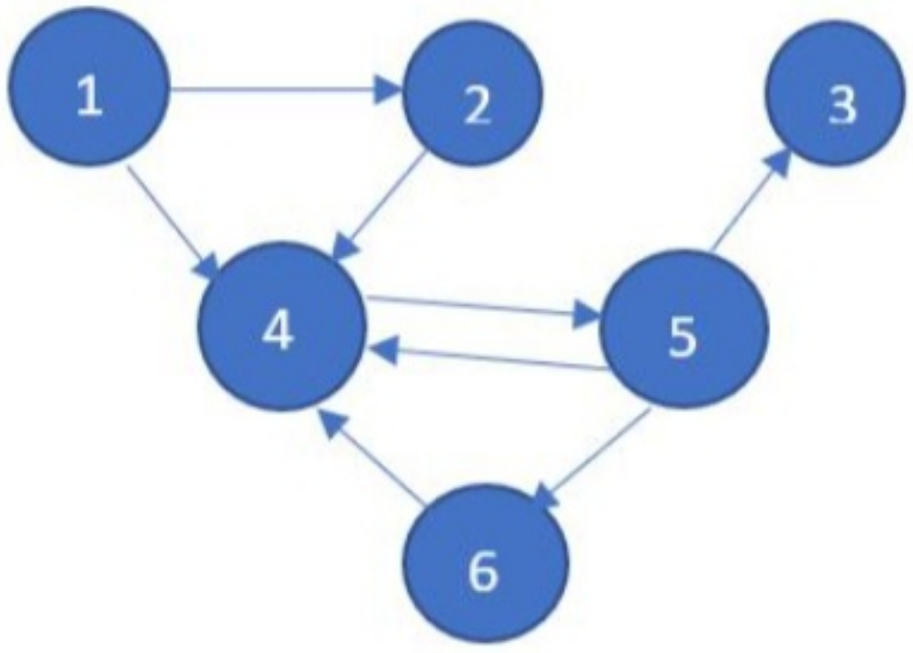
1. Consider the graph below:

1 / 1 point



We wish to represent it as an adjacency list. Select the correct statements below.

- [ ] The adjacency list for node 2 has a single entry $[1]$ representing the incoming edge $1 \to 2$.
- [x] The adjacency list for node 2 has a single entry $[4]$ representing the outgoing edge $2 \to 4$.

Correct
Correct.

- [x] The adjacency list for node 4 contains the element 5, and the list for node 5 contains the element 4.

Correct
Correct since there are edges from 4 -> 5 and 5 -> 4

- [x] The adjacency list for node 3 is empty, since it has no outgoing edges.

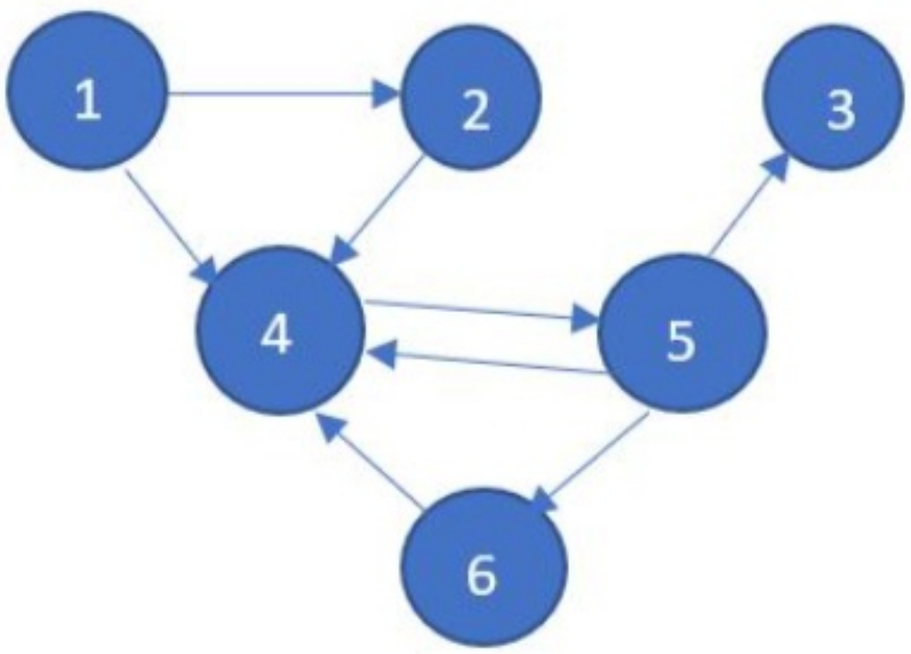
Correct
Correct, as evident from the drawing.

- [x] The total size of the adjacency list is the number of nodes (6) plus the number of edges (8).

Correct
Correct. Adjacency list has one list for each node and one entry in each list for each edge.

2. Consider the graph below:

1 / 1 point



Consider the adjacency matrix representation for the graph above. We recommend that you write down this representation for the graph above. Select all the correct facts from the list below.

- [ ] The matrix is an 8×8 matrix, since there are 8 edges in the graph.
- [x] The matrix is a 6×6 matrix, wherein each row and column corresponds to a node in the graph.

Correct
Correct.

- [x] To represent the edge $2 \rightarrow 4$, the matrix has an entry 1 in the row corresponding to node 2 and column corresponding to node 4.

Correct
Correct.

- [x] If the graph were undirected, then the adjacency matrix equals its transpose.

Correct
Correct.

- [ ] The adjacency matrix for a graph with n nodes and m edges is an $m \times m$ matrix with n entries that are 1.
- [x] The adjacency matrix for a graph with n nodes and m edges is an $n \times n$ matrix with m entries that are 1.

Correct
Correct.