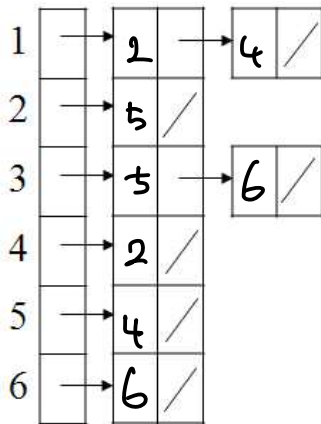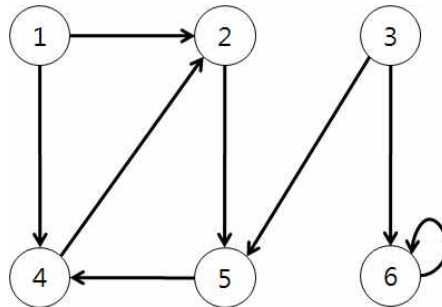# Review 12-1

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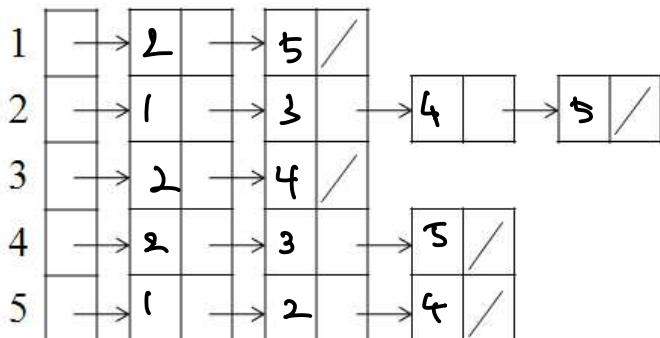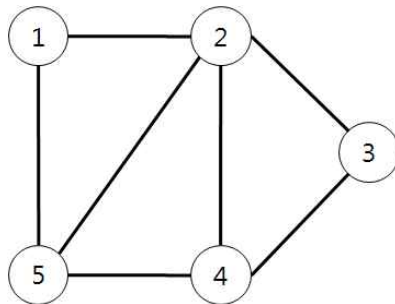
1. Show the adjacency-list and adjacency-matrix representations of given graphs.

(1) A directed graph

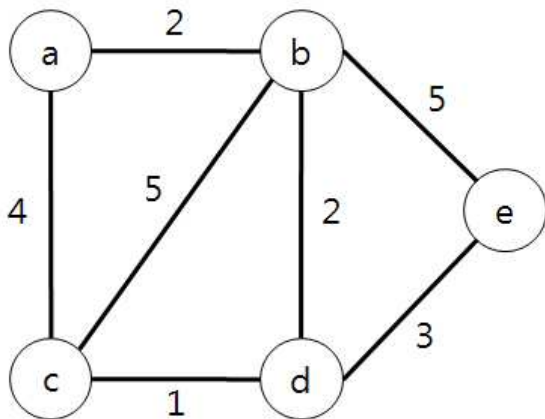Adjacency list:
- 1 → 2 → 4 /
- 2 → 5 /
- 3 → 5 → 6 /
- 4 → 2 /
- 5 → 4 /
- 6 → 6 /

Adjacency matrix:

	1	2	3	4	5	6
1	0	1	0	1	0	0
2	0	0	0	0	1	0
3	0	0	0	0	1	1
4	0	1	0	0	0	0
5	0	0	0	1	0	0
6	0	0	0	0	0	1

(2) An undirected graph

Adjacency list:
- 1 → 2 → 5 /
- 2 → 1 → 3 → 4 → 5 /
- 3 → 2 → 4 /
- 4 → 2 → 3 → 5 /
- 5 → 1 → 2 → 4 /

Adjacency matrix:

	1	2	3	4	5
1	0	1	0	0	1
2	1	0	1	1	1
3	0	1	0	1	0
4	0	1	1	0	1
5	1	1	0	1	0

2. Show the adjacency-list and adjacency-matrix representations of the following weighted graph.

Graph (weighted, undirected):
- a—b: 2
- a—c: 4
- b—c: 5
- b—d: 2
- b—e: 5
- c—d: 1
- d—e: 3

Adjacency-matrix:

	a	b	c	d	e
a	0	2	4	∞	∞
b	2	0	5	2	5
c	4	5	0	1	∞
d	∞	2	1	0	3
e	∞	5	∞	3	0

Adjacency-list:

- a → b 2 → c 4 /
- b → a 2 → c 5 → d 2 → e 5 /
- c → a 4 → b 5 → d 1 /
- d → b 2 → c 1 → e 3 /
- e → b 5 → d 3 /