

## Exercises 6

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### 2.5

in-degree of a is 6, out-degree of a is 1;  
in-degree of b is 1, out-degree of b is 5;  
in-degree of c is 2, out-degree of c is 5;  
in-degree of d is 4, out-degree of d is 2;  
in-degree of e is 0, out-degree of e is 0.

### 2.18

- a) 3, 3, 3, 3;
- b) 2, 2, 2, 2;
- c) 4, 3, 3, 3, 3;
- d) 3, 3, 2, 2, 2;
- a) 3, 3, 3, 3, 3, 3, 3, 3.

### 3.2

<i>Initial Vertex</i>	<i>Terminal Vertices</i>
a	a,b,c,d
b	d
c	a,b
d	b,c,d

### 3.8

We order the vertices as  $a, b, c, d$ . The matrix representing this graph is

$$\begin{bmatrix} 1 & 0 & 1 & 1 \\ 0 & 1 & 1 & 1 \\ 1 & 1 & 1 & 0 \\ 1 & 1 & 0 & 1 \end{bmatrix}$$

**3.10**

The matrix representing this graph is

$$\begin{bmatrix} 1 & 1 & 2 & 1 \\ 1 & 0 & 0 & 2 \\ 1 & 0 & 1 & 1 \\ 0 & 2 & 1 & 0 \end{bmatrix}$$

**3.28 c)**

No isomorphic.

**3.30**

Isomorphic.