Assignment_05
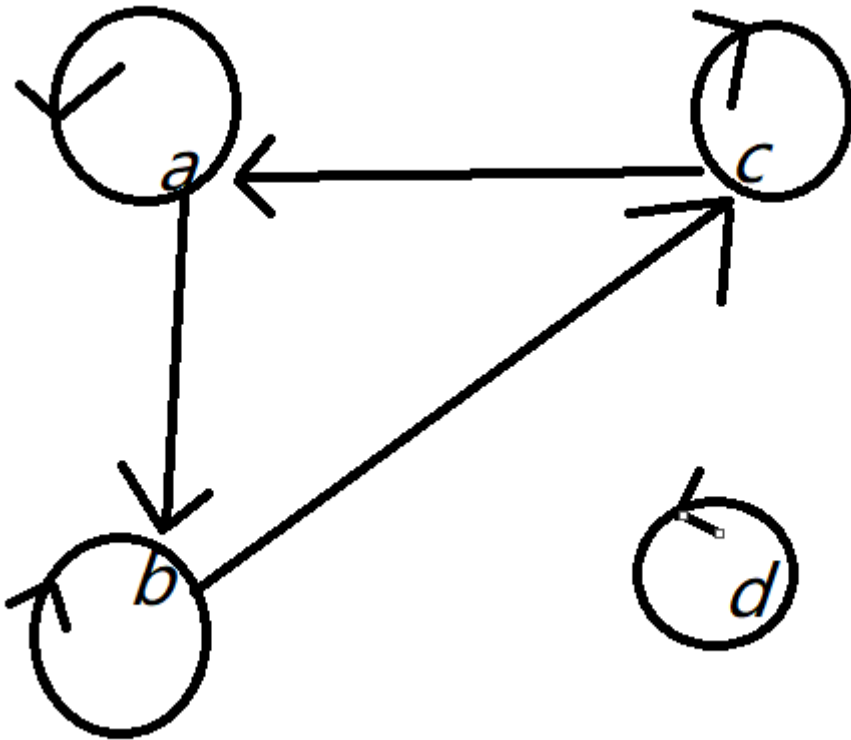
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6.

10.

$$R = \{(a, b), a > b\}$$

$$R_r = \{(a, b), a = b\}$$

$$R_s = \{(a, b), a < b\}$$

$$R' = R \cup R_r \cup R_s = \{(a, b), (a > b) \vee (a = b) \vee (a < b)\} = \{(a, b), a, b \in \mathbb{R}\}$$

14.

Proof:

Let S is the closure of R.

By the definition, we can know that

For any set T, if T has property P, and $R \subset T$,then $S \subset T$

i.e.

$$\forall T_i (T_i \ has \ P \ property), S \subset T_i$$

We can know:

$$S \subset \left(\cup_{i=1}^{n} T_i \right)$$

16.

a),c) and e) are paths.

26.

a).

	a	b	c	d	e
a	1	0	1	0	0
b	0	1	0	1	0
c	1	0	1	0	0
d	0	1	0	1	0
e	0	1	0	1	0

b).

	a	b	c	d	e
a	0	0	0	0	0
b	0	1	1	0	1
c	0	1	1	0	1
d	1	0	0	0	0
e	0	1	1	0	1