#20193801 41
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Exercise-9.6

1)

(a) reflexive, anti-symmetric, transitive
~~reflective~~ partial ordering

(c) reflexive, anti-symmetric, transitive,
partial ordering

(e) reflexive, not anti-symmetric,
not transitive, not partial ordering

9) reflexive, anti-symmetric, not transitive
not partial ordering.

15)

(a) $(P(\{0,1,2\}), \subseteq)$

$S = P(\{0,1,2\})$

$R = \{(a,b) \mid a \subseteq b\}$

two incomparible elements)

$\{0,1\} \in P(\{0,1,2\})$ & $\{1,2\} \in P(\{0,1,2\})$, while

$\{0,1\} \not\subseteq \{1,2\}$

$\{1,2\} \subseteq \{0,1\}$

Thus, $\{0,1\}$ & $\{1,2\}$ are incomparible elements
(neither set is a subset of the other)

(b) $(\{1,2,4,6,8\}, 1)$

$S = \{1,2,4,6,8\}$

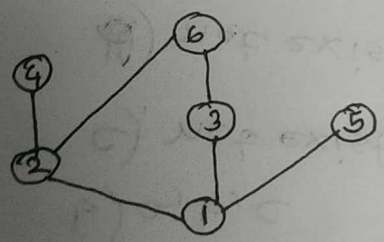
$R = \{(a,b) \mid a \text{ divides } b\}$

example

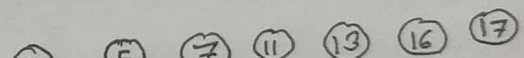
$1 \in \{1,2,4,6,8\}$ and $3 \in \{1,2,4,6,8\}$ while 1 doesn't divide 3, 3 doesn't divides 1 thus are elements.

22)

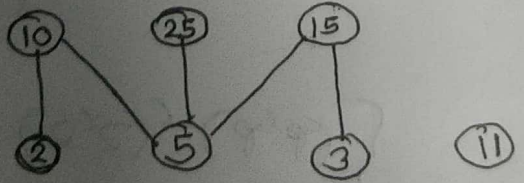
a)



b)

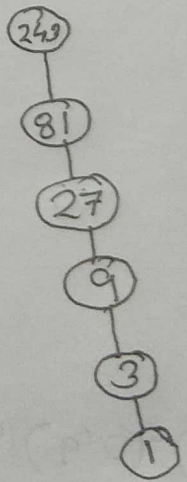


c)



11

d)



25)

R: {(a,a), (a,b), (a,c), (a,d), (b,b), (b,c), (b,d)
(c,c), (d,d)}

32)

a) l, n

b) a, b, c

c) not exist

d) not exist

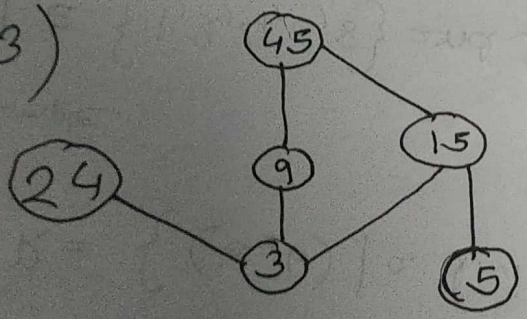
e) k, l, m

f) k

g) donot exist

h) not exist

33)



a) 24, 45

b) 3, 5

c) not exist

d) not exist

e) 15, 45

f) 15

g) 15