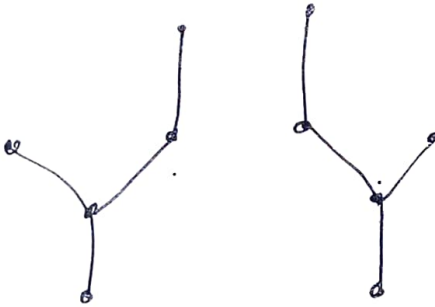


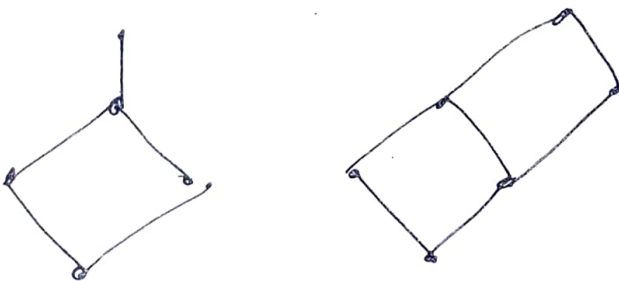
## Assignment

1. Convert the B.E  $f(x, y) = x \cdot y' + x' \cdot y + x' \cdot y'$  into CNF.
2. Write the CNF and DNF form of  $f(x, y, z) = (x' + y + z')(x' + y + z)$
3. Simplify using K-Map.
  - (a)  $F(A, B, C, D) = \sum (0, 1, 3, 4, 7, 8, 10, 11, 12, 13, 15)$
  - (b)  $F(A, B, C, D) = \sum (0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 11)$
  - (c)  $F(A, B, C) = \sum (0, 1, 2, 4, 5)$
4. Check subrattices of lattice are isomorphic or not

(a)



(b)



(5) which of these are lattices

(a)



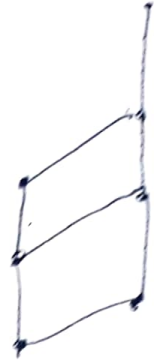
(b)



(c)



(d)



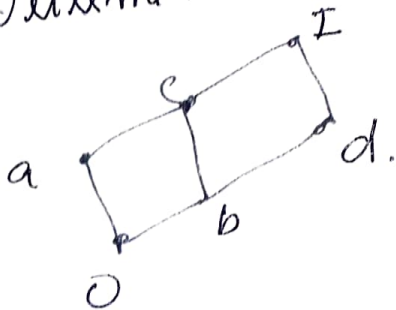
(6) Draw  $(D_{36}, |)$  and show it is a lattice.

(7) If  $(d, \leq)$  is distributive lattice,  $a, b, c \in d$  then  $a \vee b = a \vee c$  and  $a \wedge b = a \wedge c \Rightarrow b = c$

(8) In a distributive lattice  $(d, \vee, \wedge)$   
 $(a \wedge b) \vee (b \wedge c) \vee (c \wedge a) = (a \vee b) \wedge (b \vee c) \wedge (c \vee a)$

$\forall a, b, c \in d$ .

(9) Determine complement of  $a$  &  $c$



(10) Find the minimal ~~sum~~ using K-map

(a)

$$f(a, b, c) = ab'c' + abc' + abc + ab'c +$$

(b)

$$f(a, b, c, d) = a'b'c'd' + a'bc'd + a'b'ca + a'b'cd' + a'bca$$