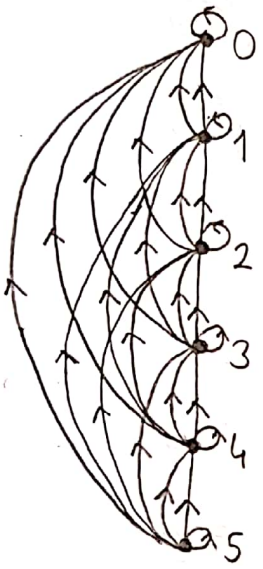
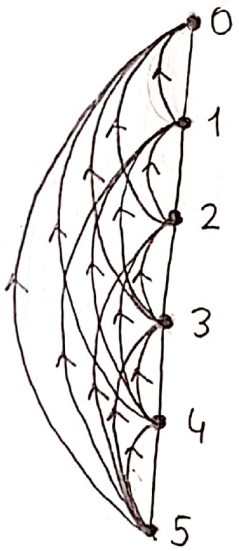
(1) $R = \{(0,0), (1,1), (2,2), (3,3), (4,4), (5,5), (1,0), (2,0), (3,0), (4,0), (5,0), (2,1), (3,1), (4,1), (5,1), (3,2), (4,2), (5,2), (4,3), (5,3), (5,4)\}$

Step 1: Diagram

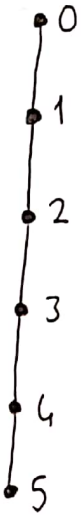



Step 2: Remove self loops. (Reflexive)




Step 3: Remove transitive relation.


Step 4: Remove arrows.



② a) Maximal elements : {2,3,4}, {1,3,4}

b) Minimal elements : {1}, {2}, {4}

c) Greatest element : There is 'no' greatest element.

d) Upper bounds of {{2}, {4}} : {2,4}, {2,3,4}

e) The least upper bound of {{2}, {4}} : {2,4}

f) All lower bounds of {{1,3,4}, {2,3,4}} : {4}, {3,4}

h) The greatest lower bound of {{1,3,4}, {2,3,4}} : {3,4}