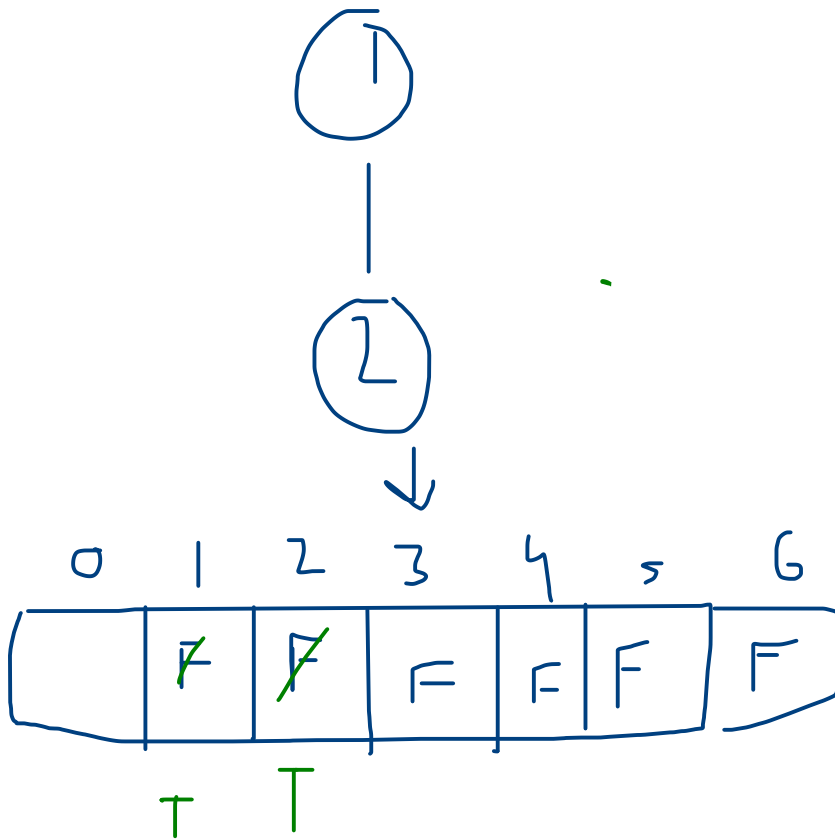


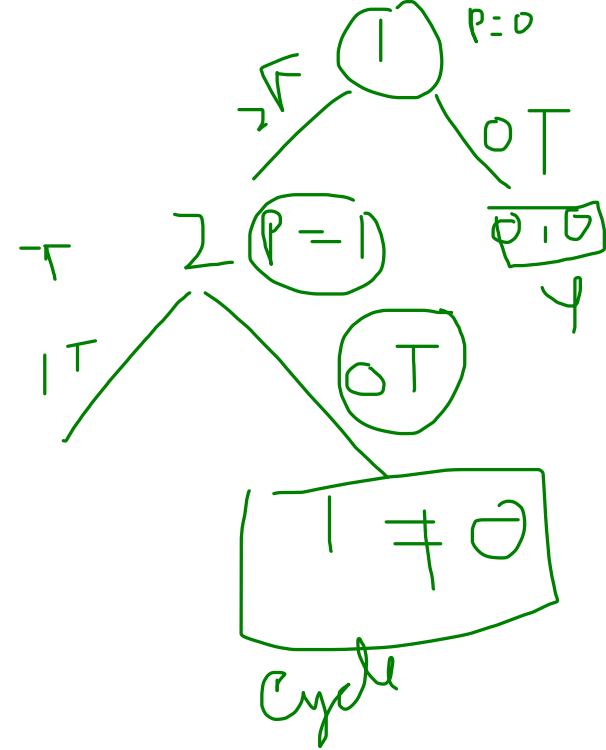
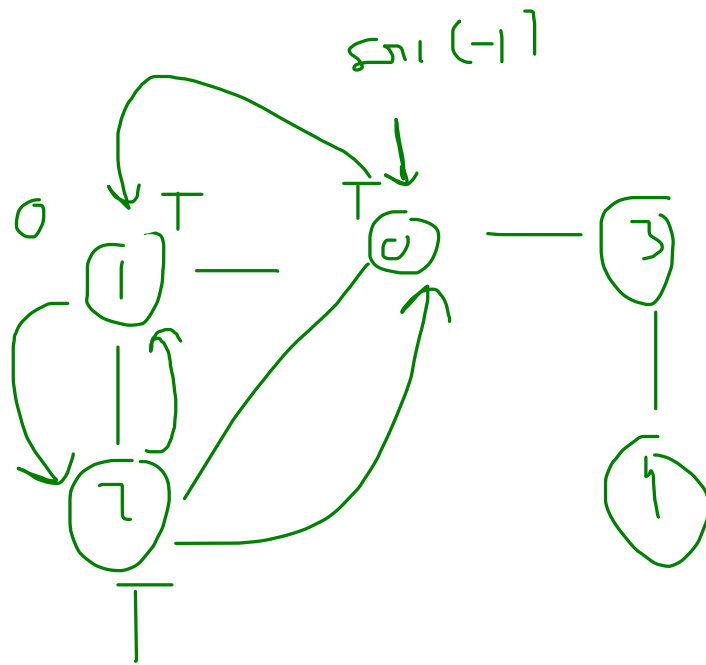
DFS --> mark visit any where

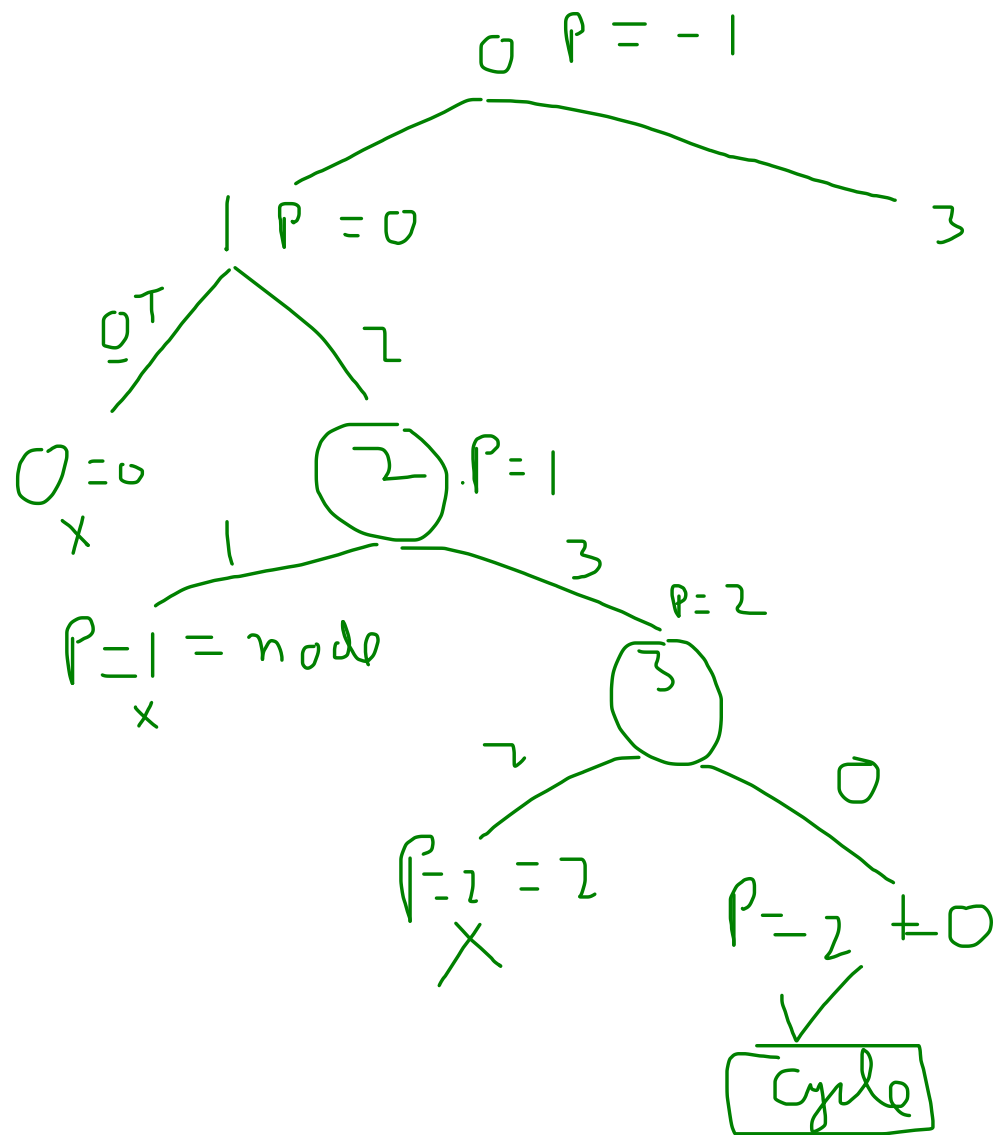
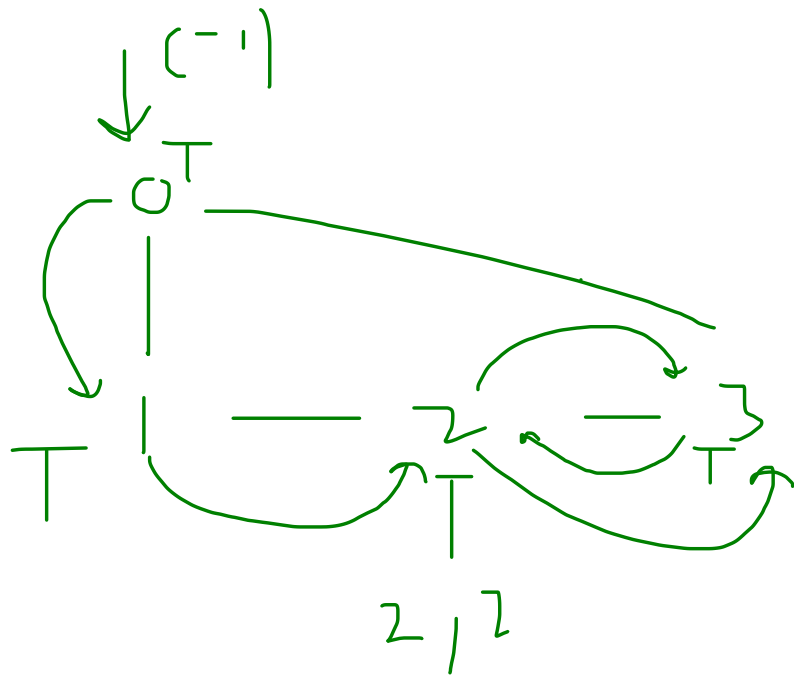
BFS -->

- a) mark visit outside for loop for NBR --> vertex can repeat in queue if graph have cycle
- b) mark visit inside for loop for NBR --> vertex will not repeat in queue

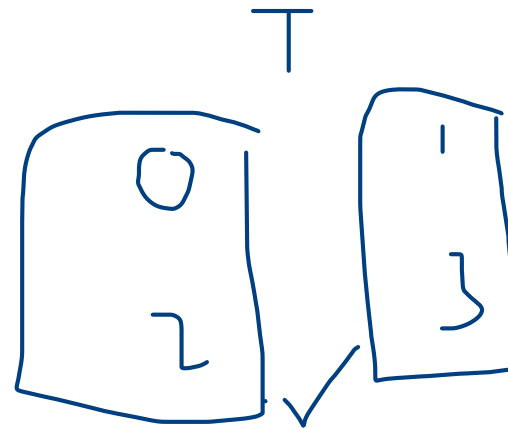
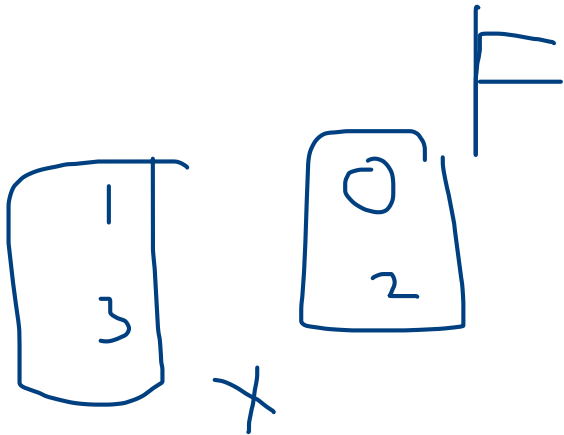
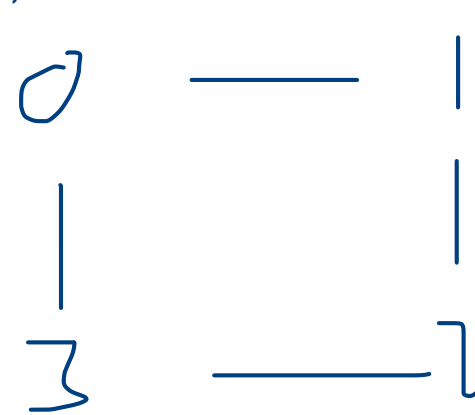
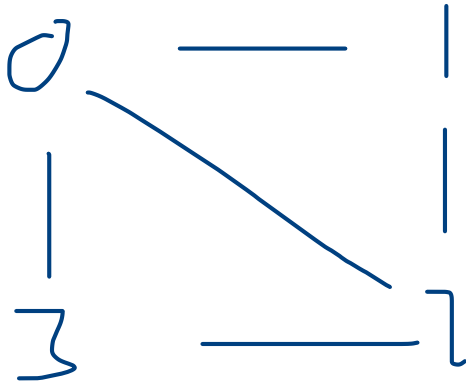
# Cycle Detection in Undirected Graph Using DFS

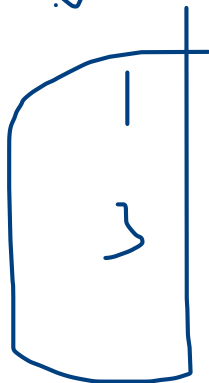
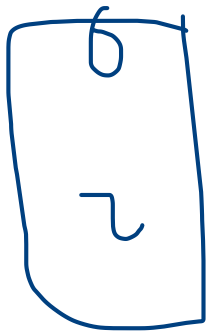
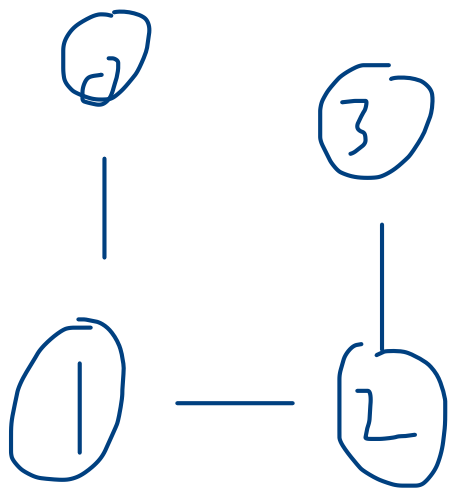






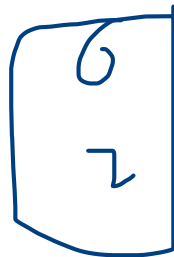
# ~~Bipartite~~ Graph

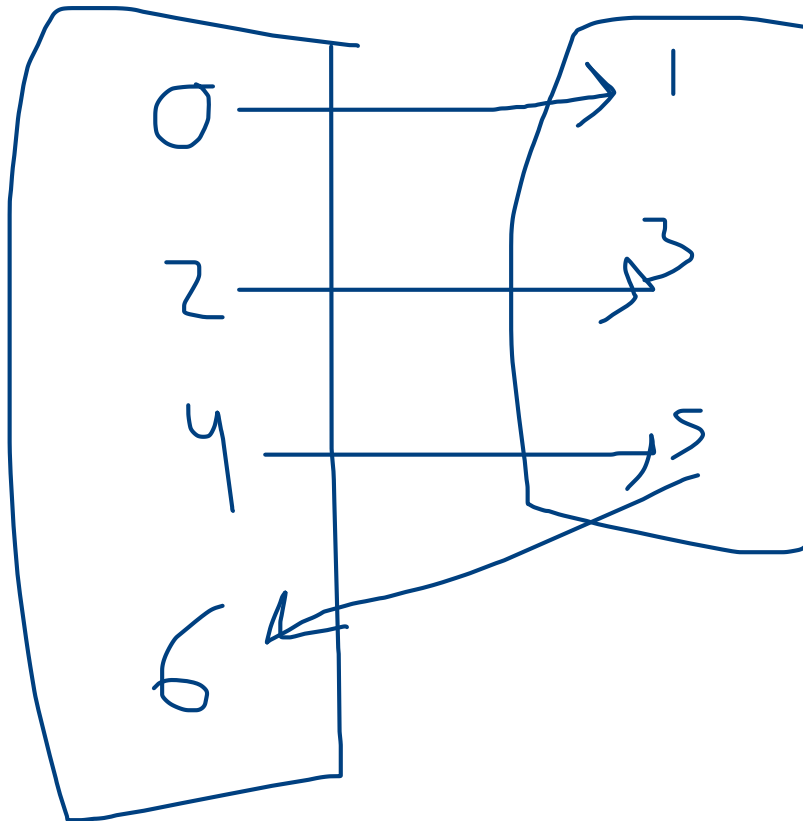




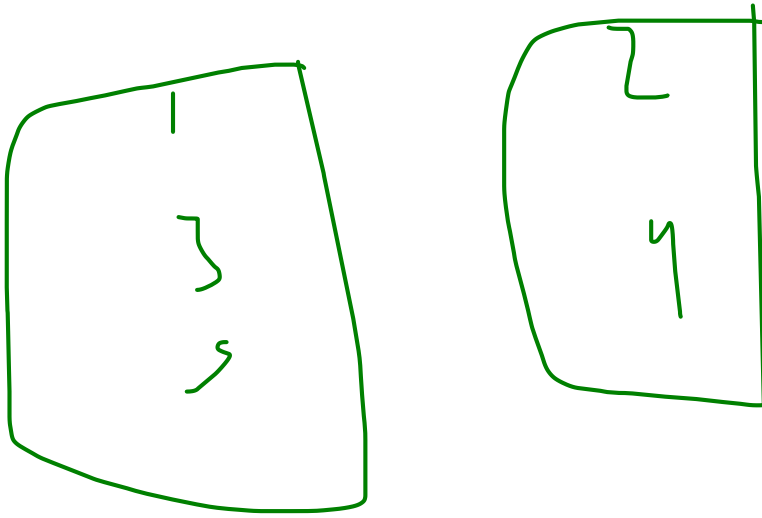
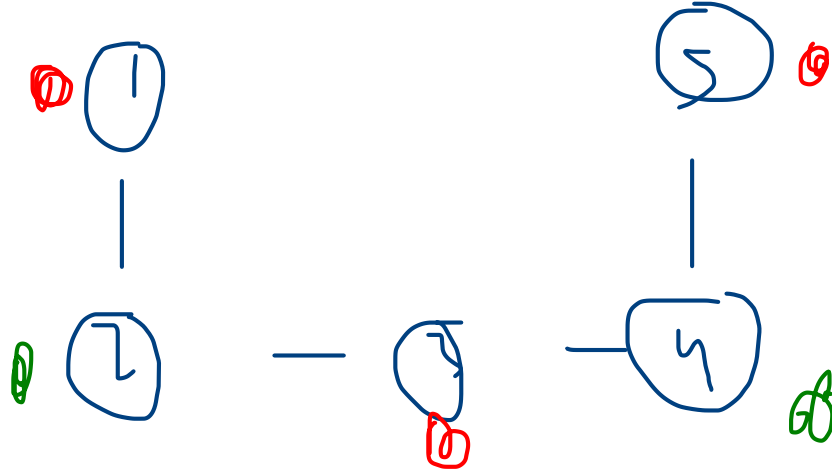
0

1



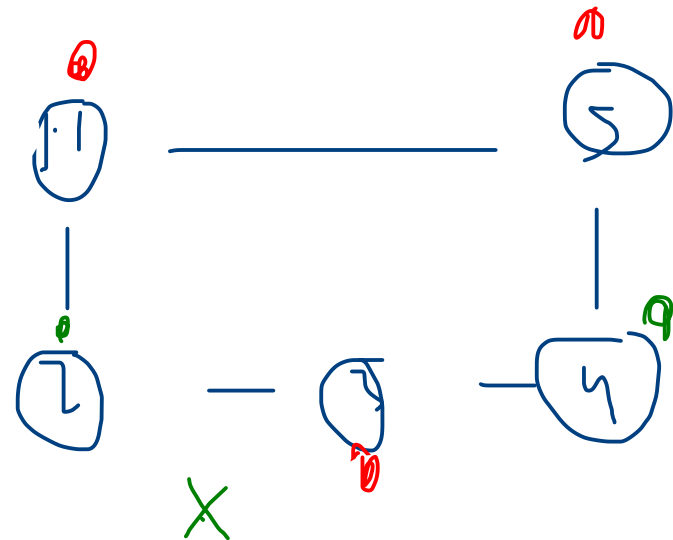
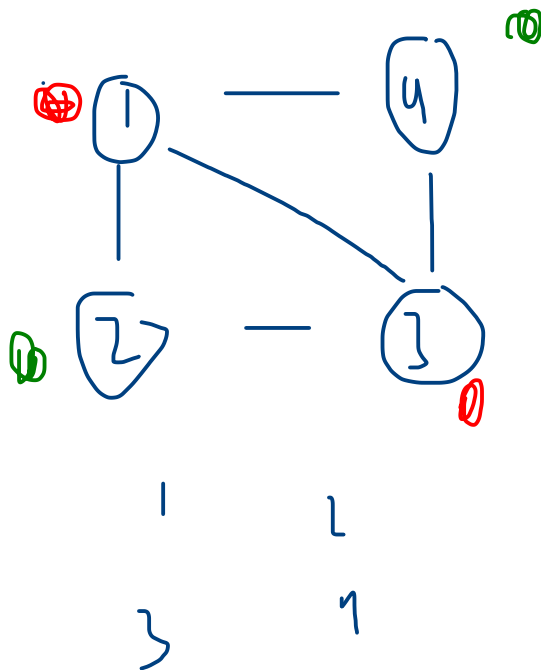
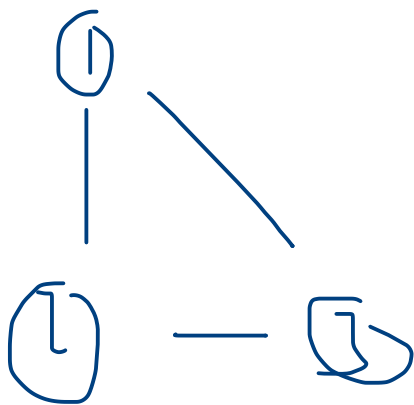


every  
Acyclic  
graph is  
bipartite





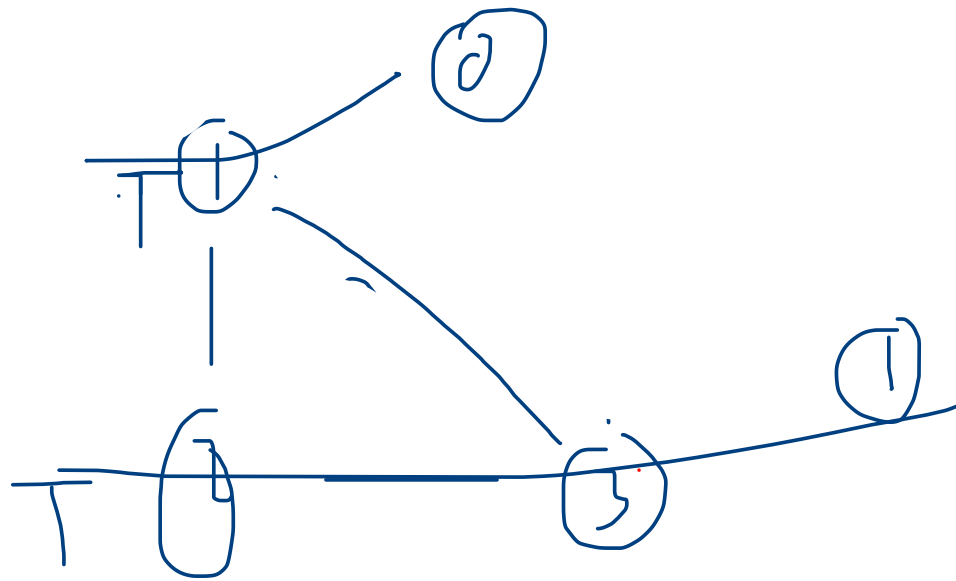
X



## Bi Partite

1. Acyclic --> always true
2. Cycle -->

all cycle must be of even length --> true

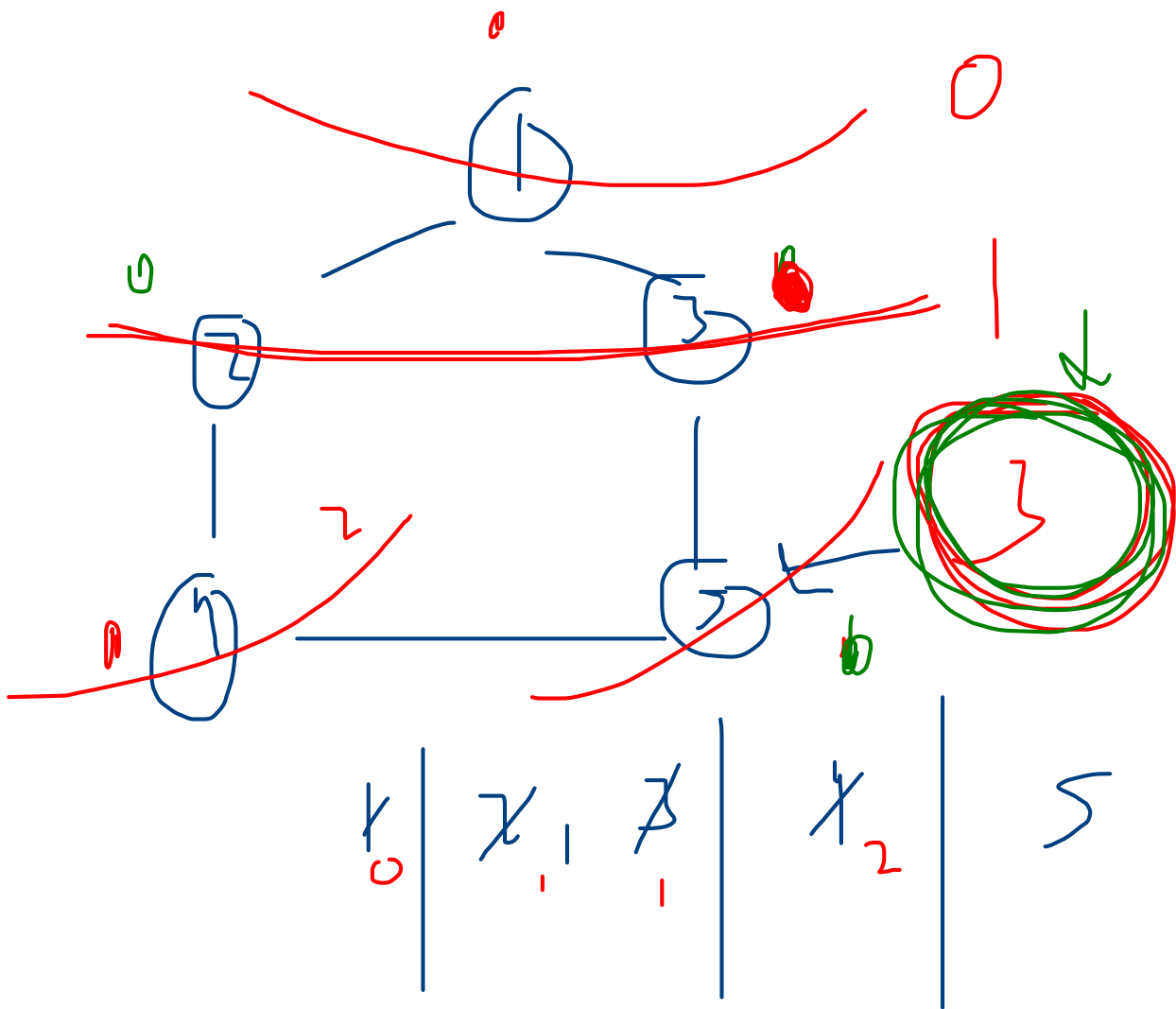


Hand  
Map

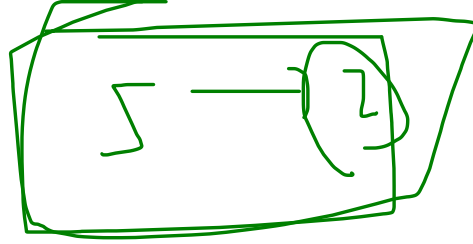
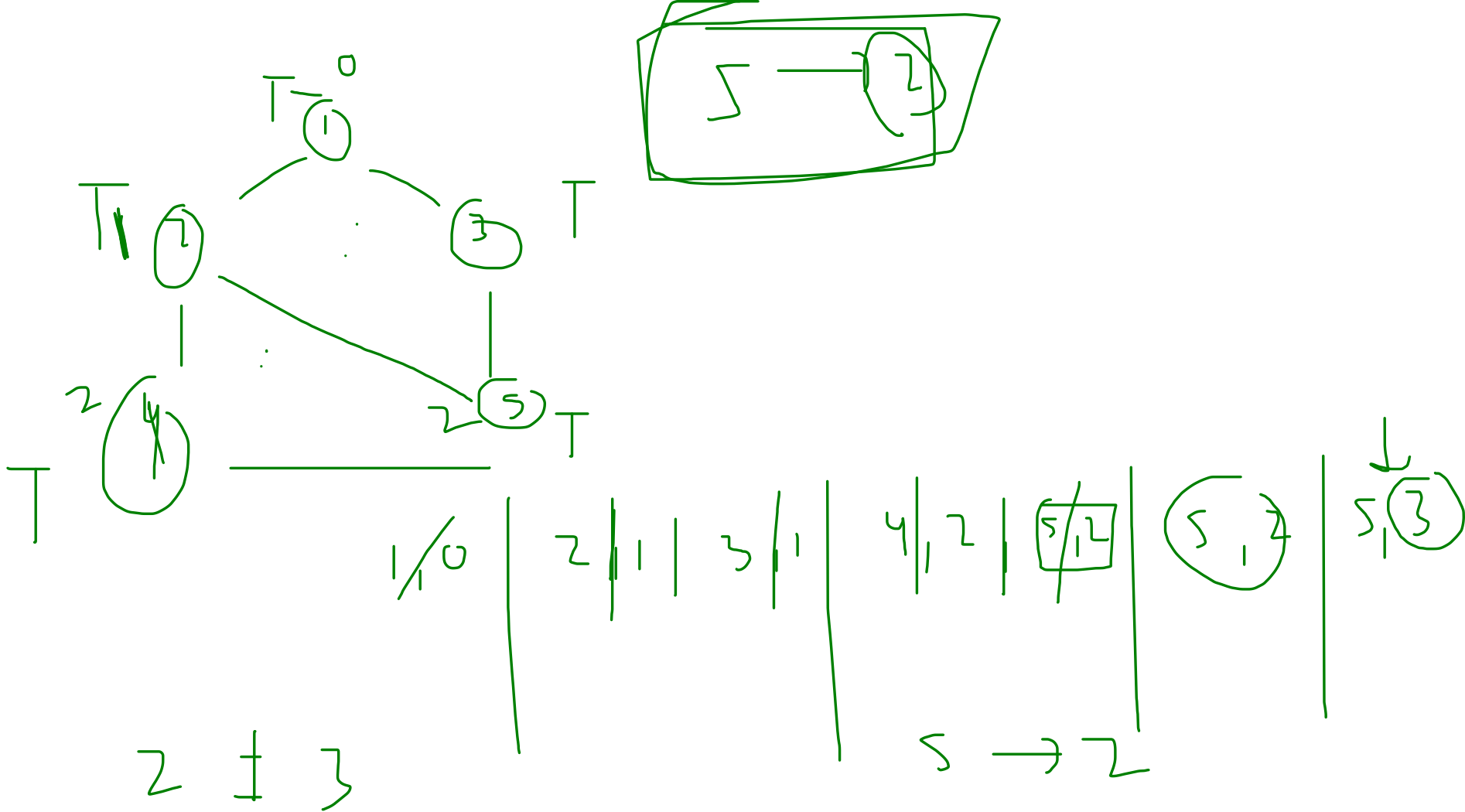
1	→	0
2	→	1
4	→	1
3	→	2

(1/0)	2/1	4/1	3/2	3/3
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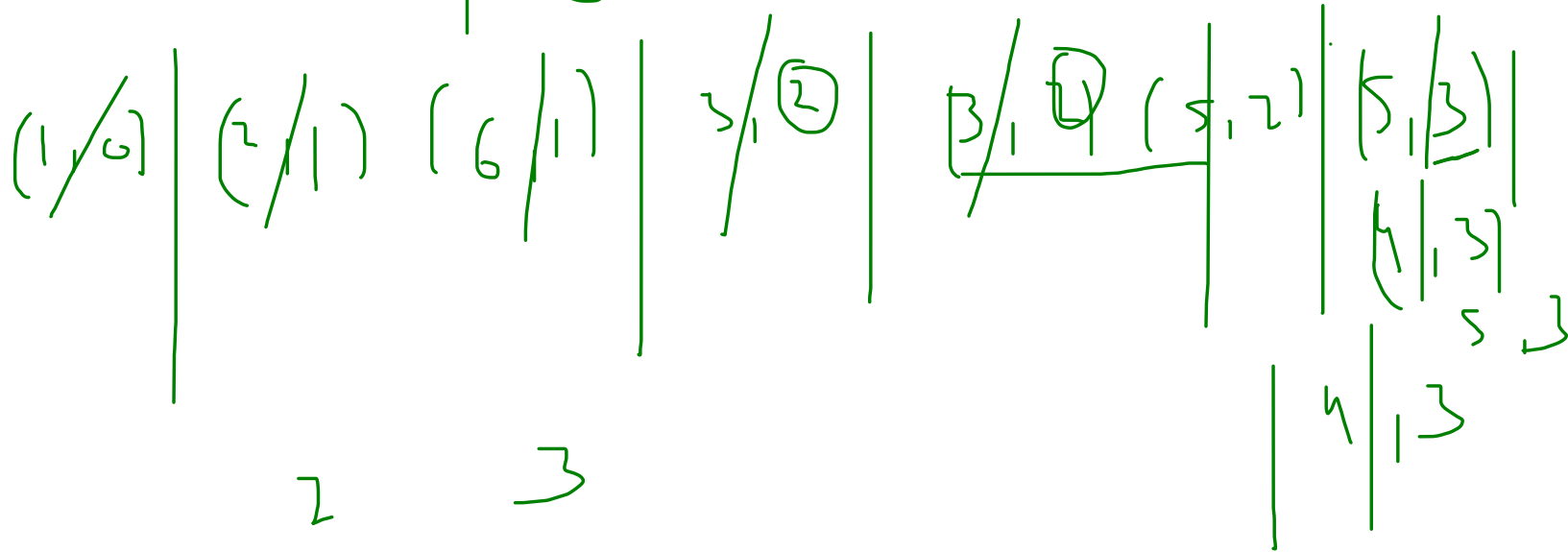
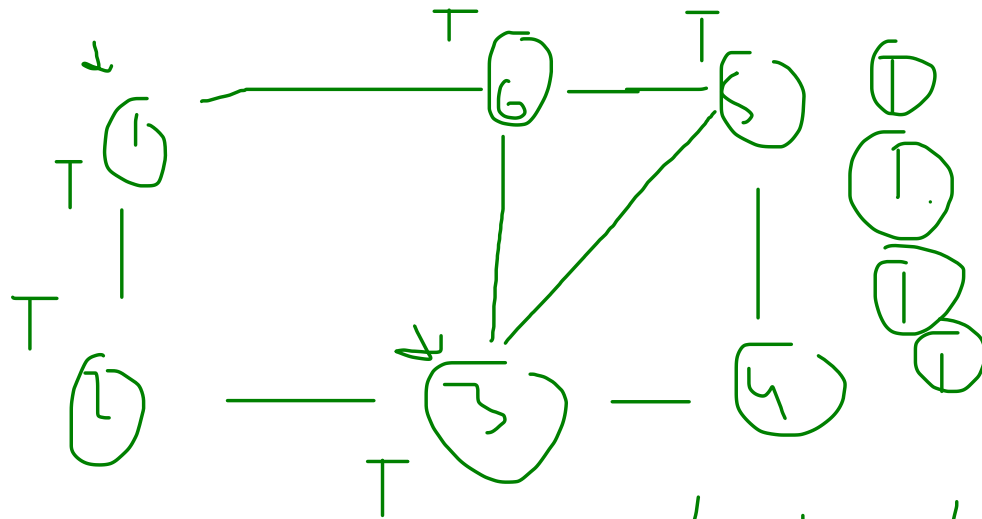
2      3

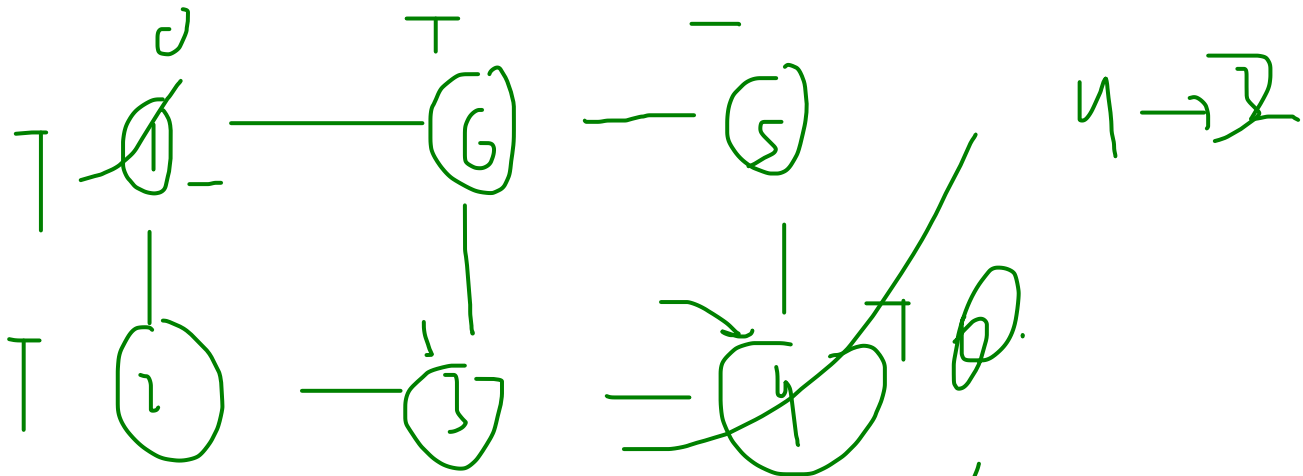


$$3d2 = 1$$



$1 \rightarrow 0$   
 $2 \rightarrow 1$   
 $6 \rightarrow 1$   
 $3 \rightarrow 2$   
 $5 \rightarrow 2$   
 $4 \rightarrow 3$





$1, 1/0$

$3/2$   
 $5/2$

$4/3$   
 $4/3$

$4 - 4$   
 $2 \neq 4$

$3002$

