

25 from now

HP = HamPath

HC = Ham Cycle

$$3SAT \leq_p HP$$

- down to - up

UHP
HamPath

UHP
down

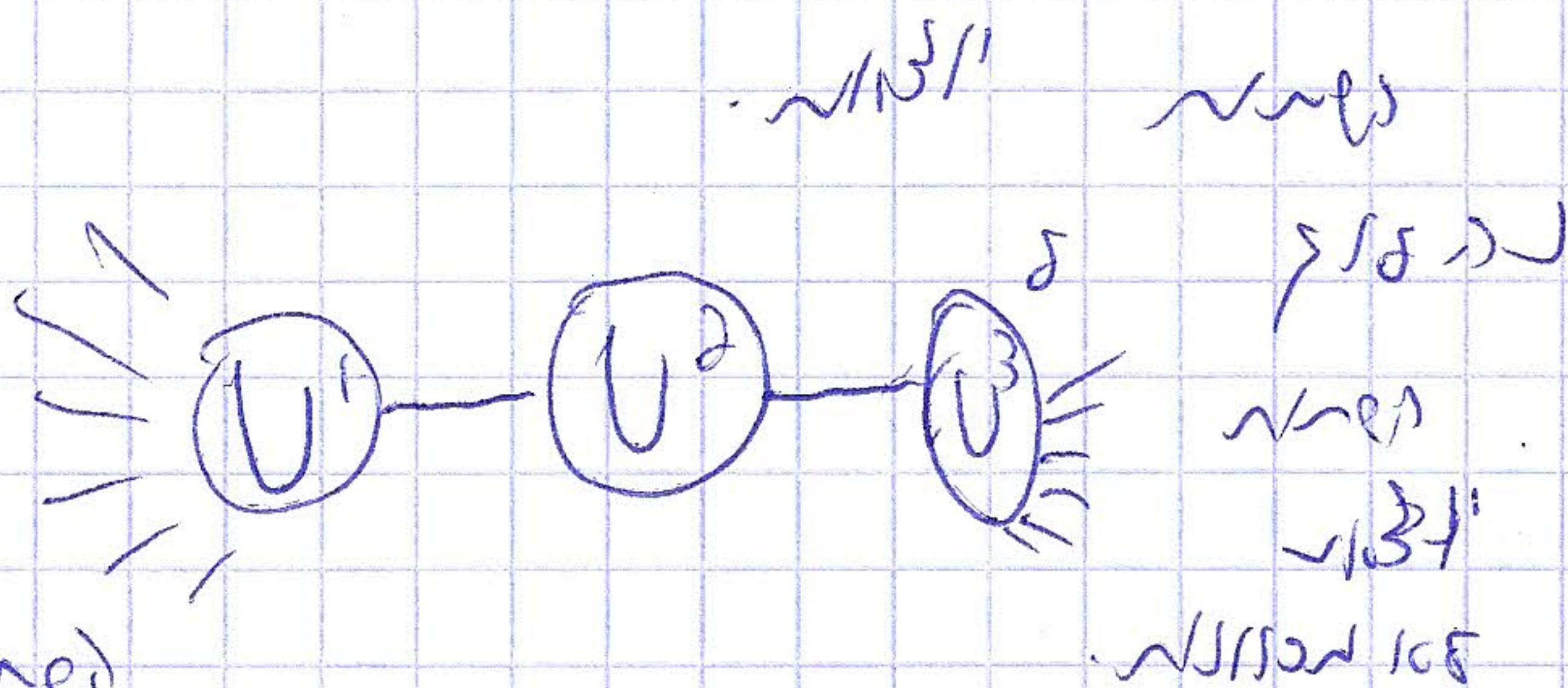
$UHC \in NPC$

$$HC \leq_p UHC$$

- down to - up

G' G

$u \in G$



down

G' G

(u, v)

$(u_1, u_2), (u_2, u_3), (u_3, v_1), (v_1, v_2), (v_2, v_3)$

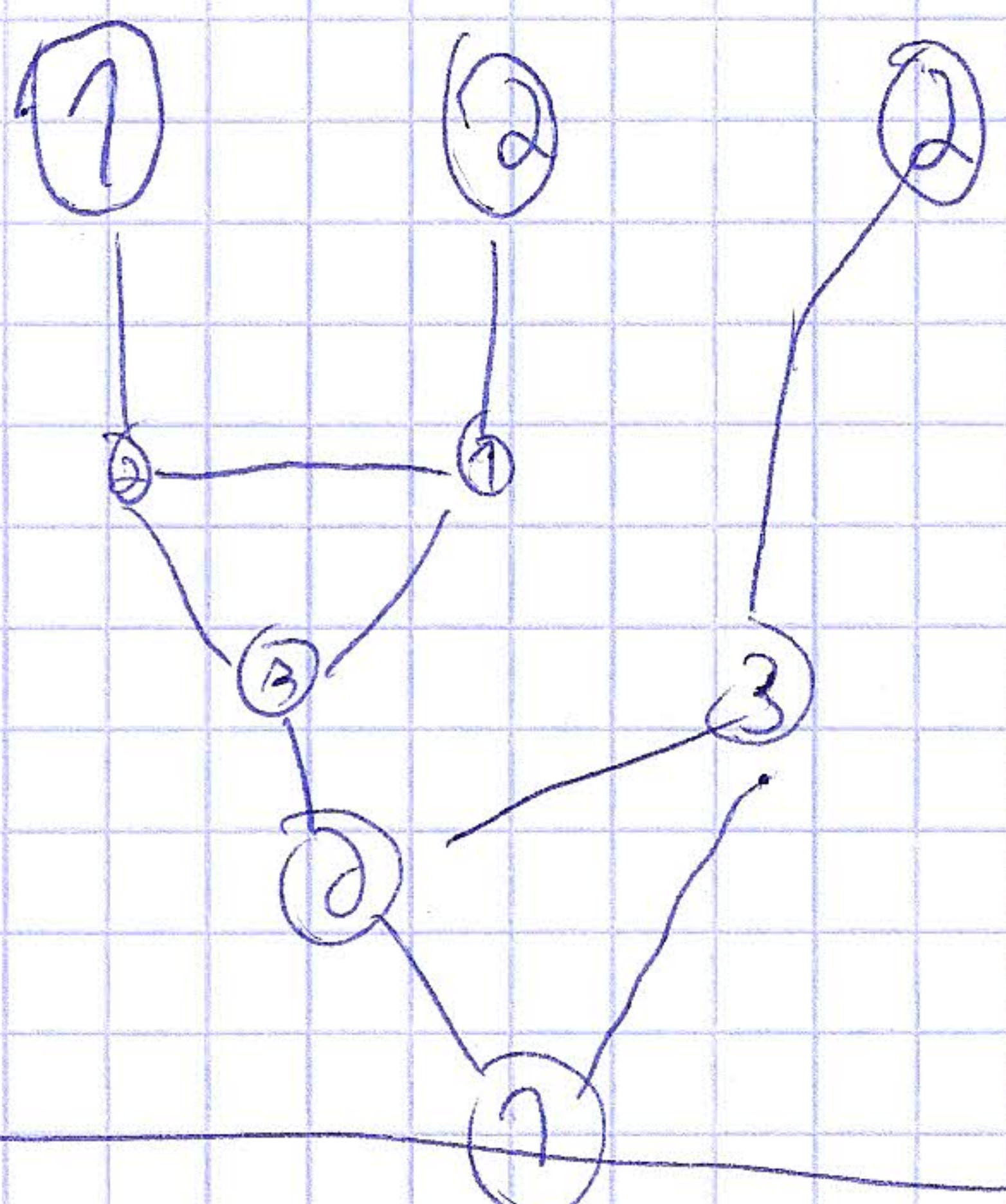
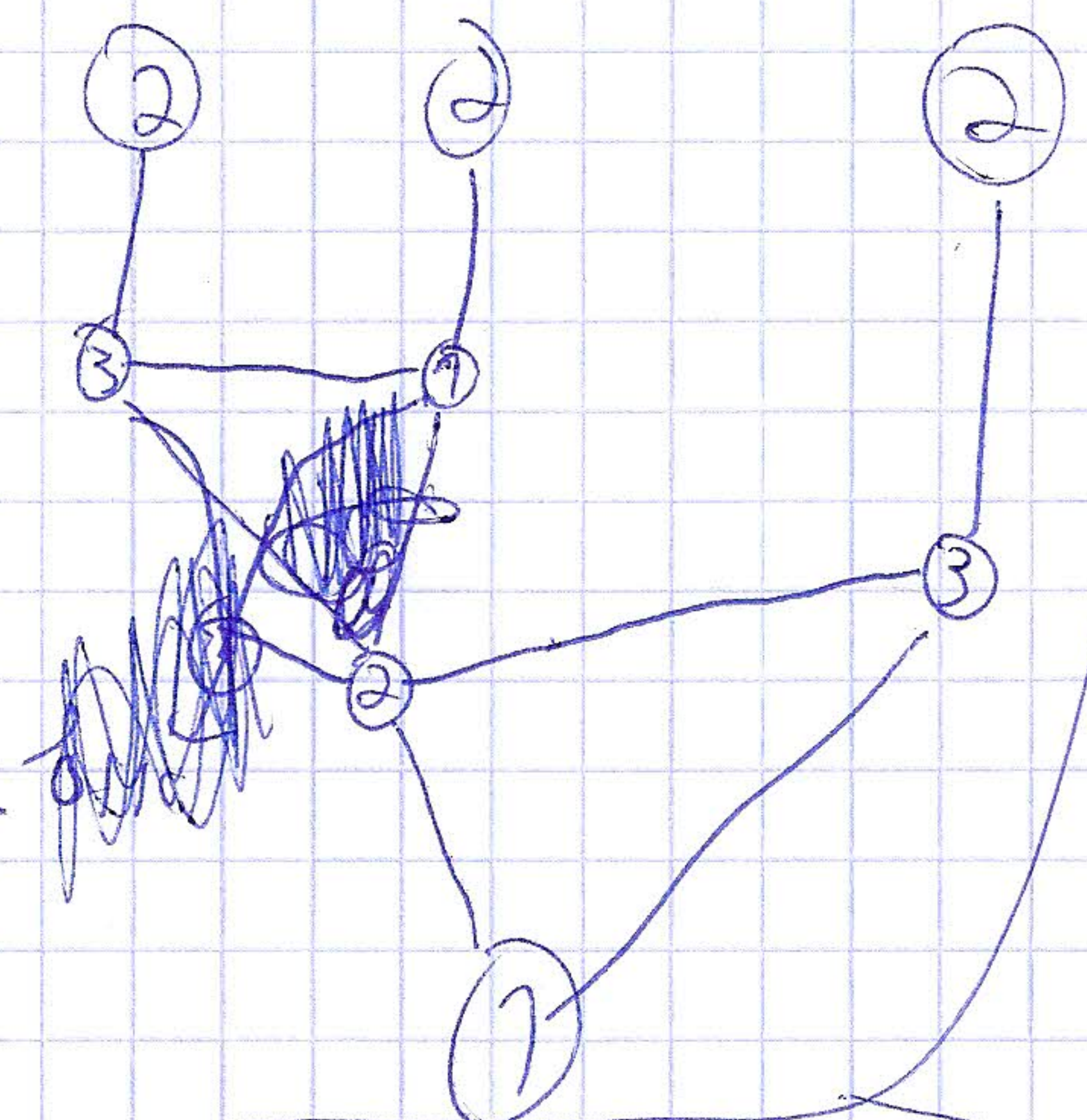
G'

$(u_1, u_2), (u_2, u_3)$

u_1 u_2

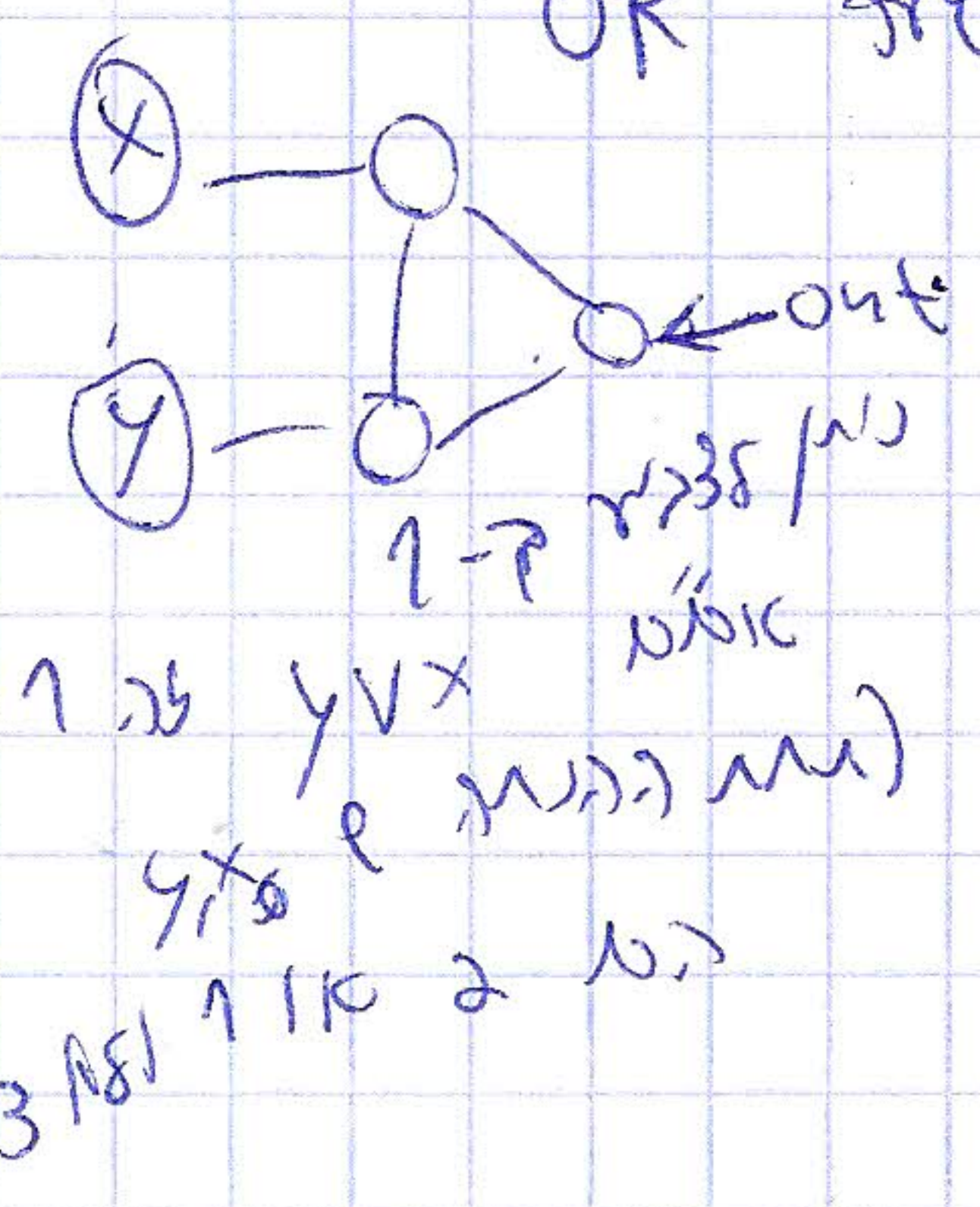
down

"max"



OR
 OR
 OR

decision



decision - $D(G, k)$

clique
 (subset of nodes)
 "clique"

Selection - $S(G, k)$
 (subset of nodes)

graph
 graph

graph

graph

(graph)

Optimization

find max k

decision

(k)

k

graph

graph