

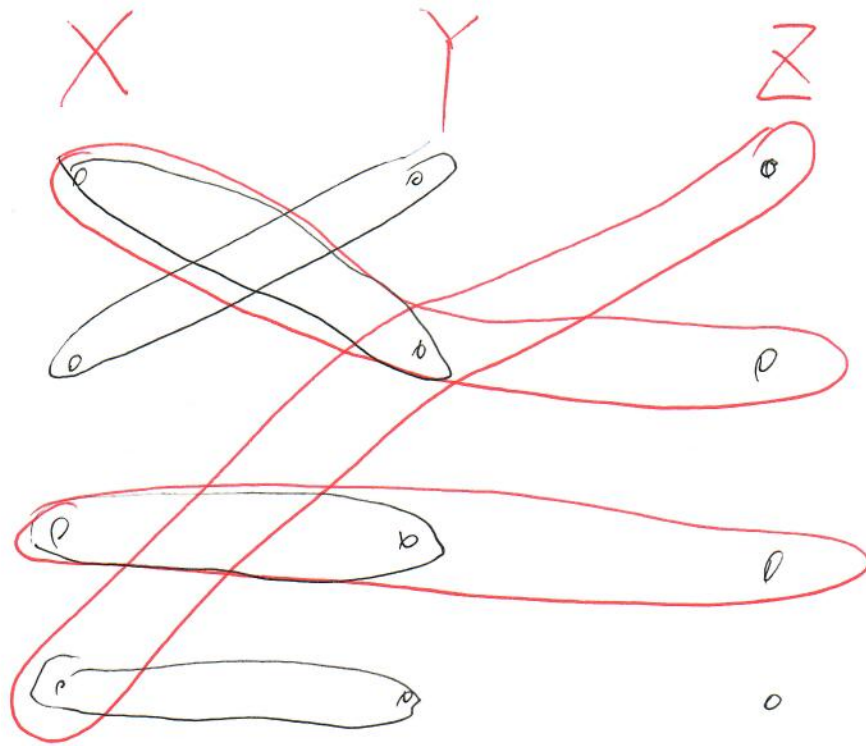
Reduction: Hamiltonian Cycle \leq_p TSP

Given $G = (V, E)$, ~~if~~ if $(i, j) \in E$,

let $c_{ij} = 1$, if $(i, j) \notin E$, let $c_{ij} = \boxed{D+1}$

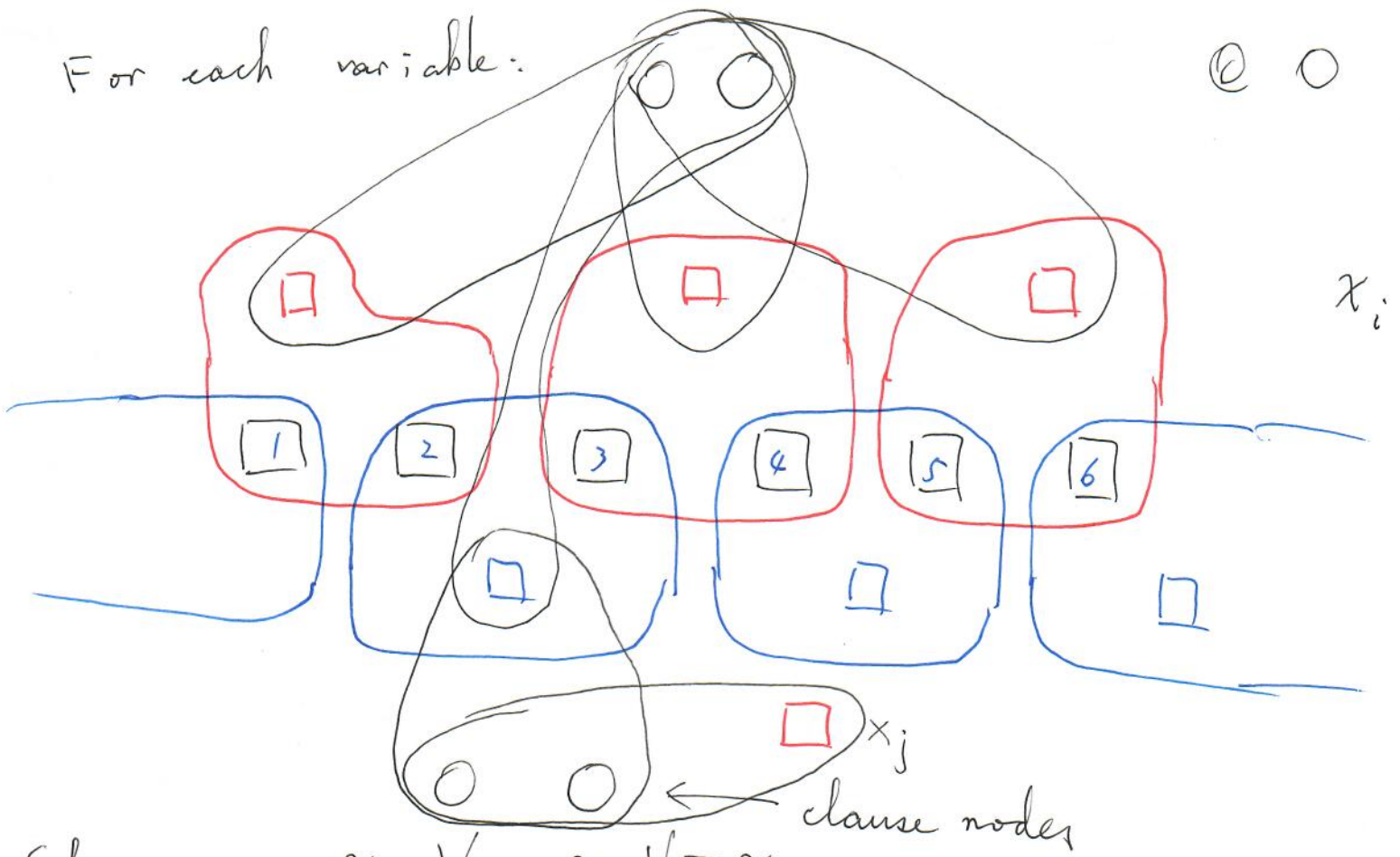
↓
2

Set $D = n$ ~~1~~



For each variable:

⊙ ⊙



x_i

Clause $x_i: V \vee \neg x_j \vee \neg x_k$

Let Red edges (being used to cover x_i nodes)
represent x_i being assigned TRUE,

Blue edges (being used to cover x_i nodes)
represent x_i being assigned FALSE.

Cleaning up: Create 2 ~~nodes~~ clean up nodes for each colored node that needs to be cleaned up.

How many ~~clean-up~~ ^{colored} nodes need to be cleaned up?
 m clauses, each ~~no~~ variable has m free colored nodes; altogether
 mn colored nodes. Clause nodes covers m of them, so we need to
clean up $mn - m$ colored nodes.