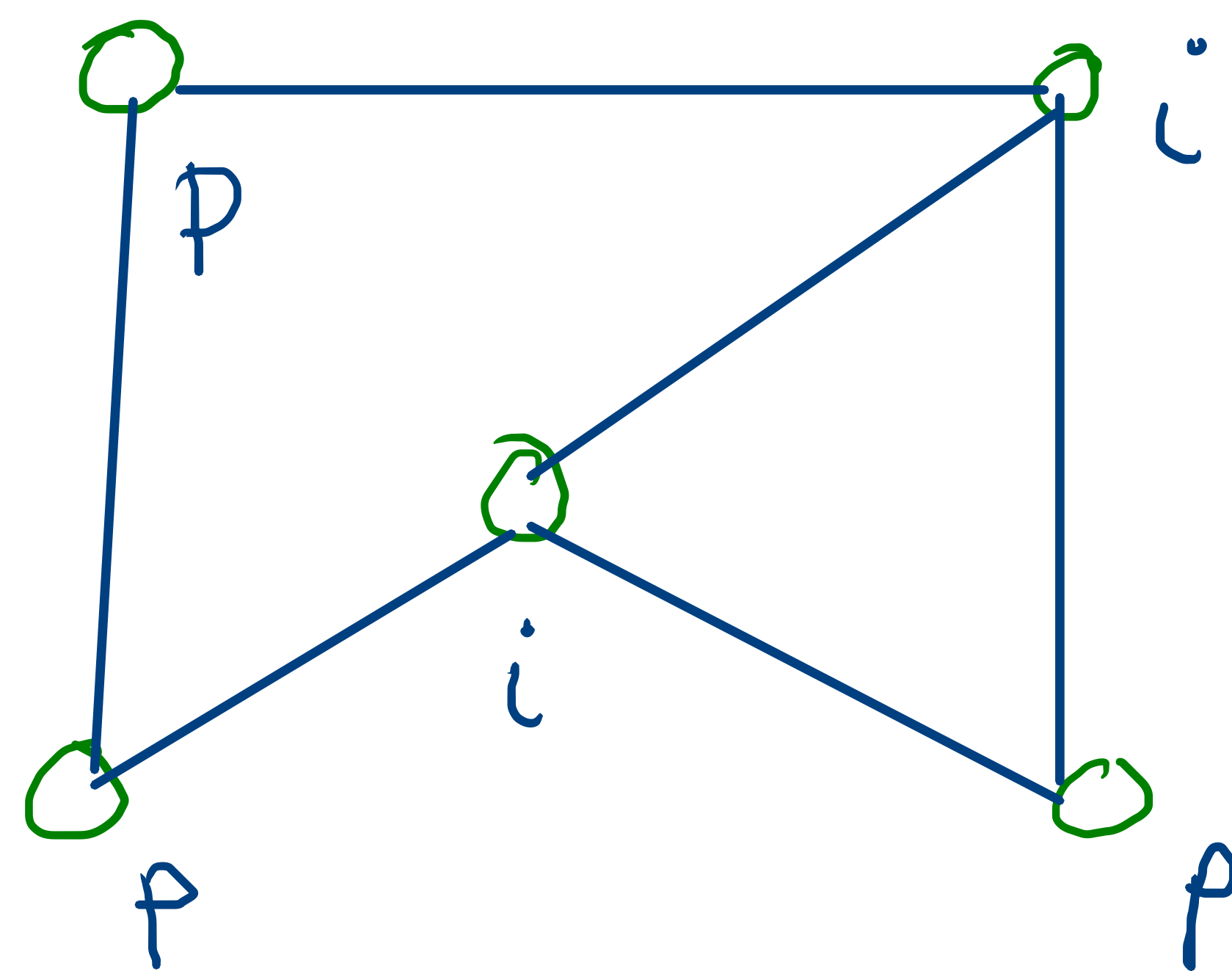
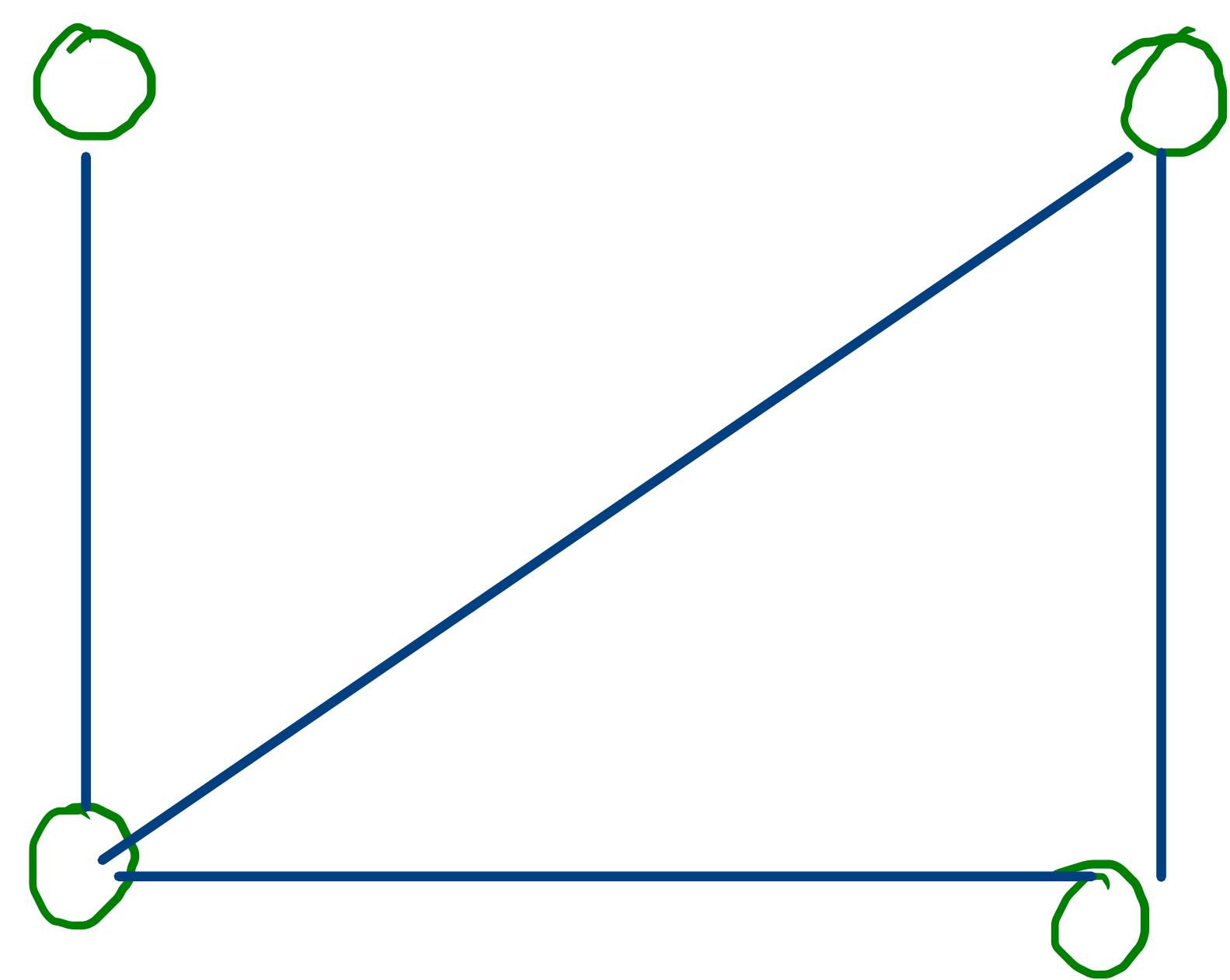


Corollaire

Dans un graphe, le nombre de sommets de degré impair est un nombre pair.



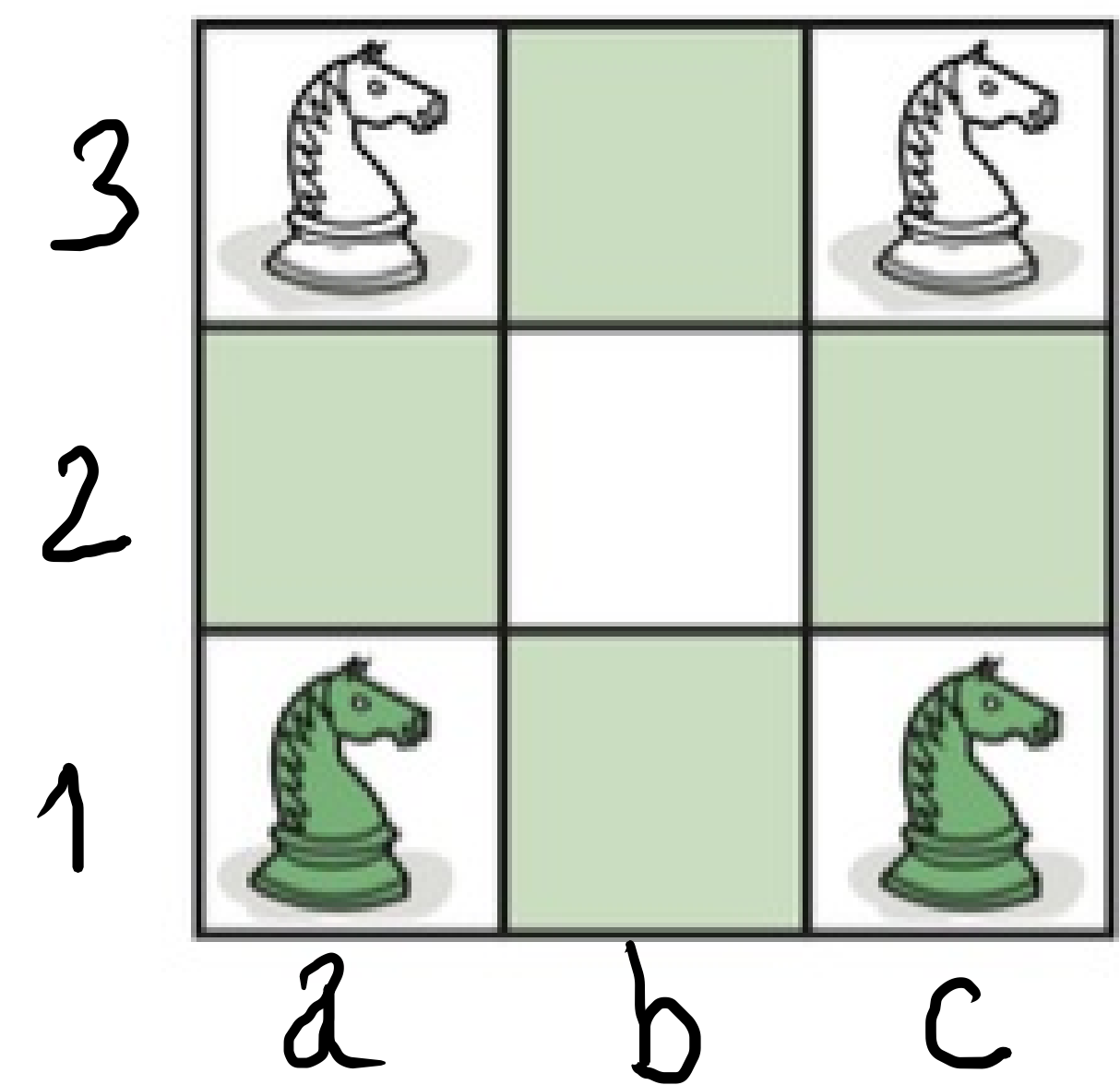
Soit p la somme des degrés des sommets pairs et i la somme de degrés des sommets impairs

$S = p + i$ est la somme des degrés des sommets.

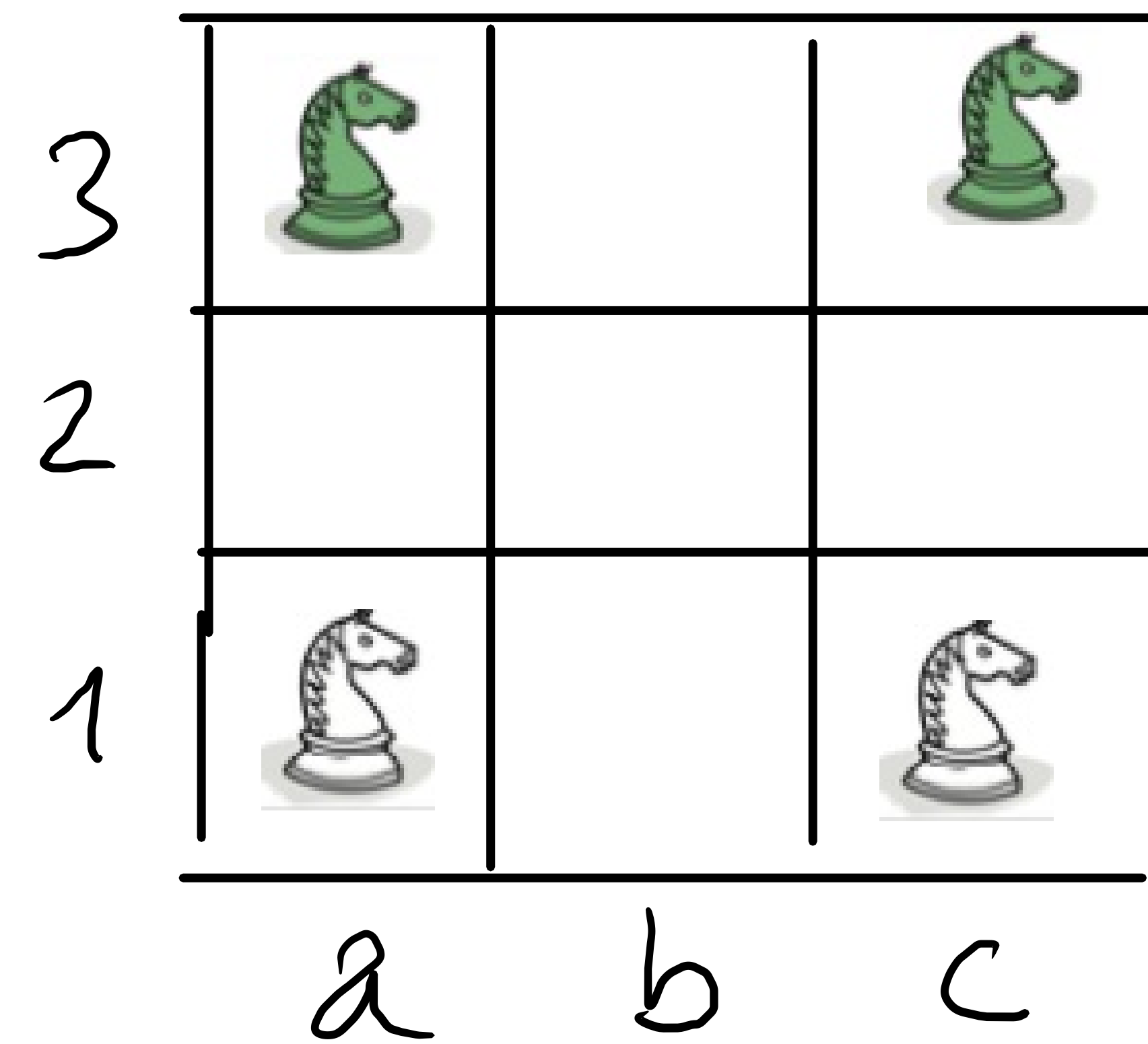
$$S = \underbrace{p_1 + \dots + p_n}_{\text{un pair}} + \underbrace{i_1 + \dots + i_q}_{\text{pair}} \Rightarrow$$

3.1,6

On considère maintenant le mini échiquier 3 x 3 de la figure ci-dessous où sont placés deux cavaliers blancs et deux cavaliers en couleur.



Est-il possible de permuter les deux cavaliers blancs et les deux cavaliers en couleur ?



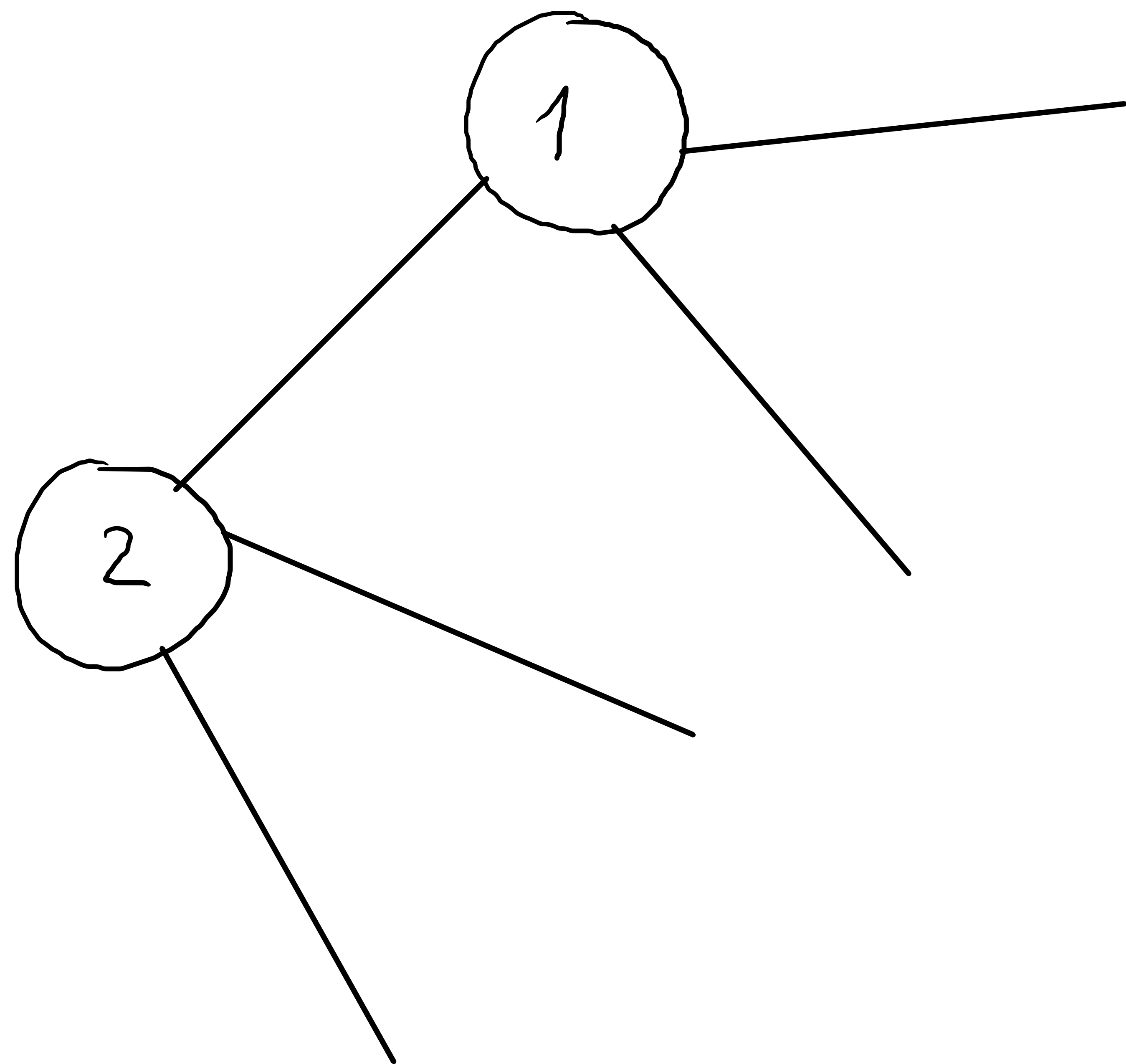
$c_3 - b_1, a_3 - c_2, a_1 - b_3, c_1 - a_2$

$b_1 - a_3, c_2 - a_1, b_3 - c_1, a_2 - c_3$

$c_3 - b_1, a_3 - c_2, a_1 - b_3, c_1 - a_2$

$b_1 - a_3, c_2 - a_1, b_3 - c_1, a_2 - c_3$

3.1.8 Est-il possible de relier 15 ordinateurs de sorte que chaque appareil soit relié avec exactement trois autres ?

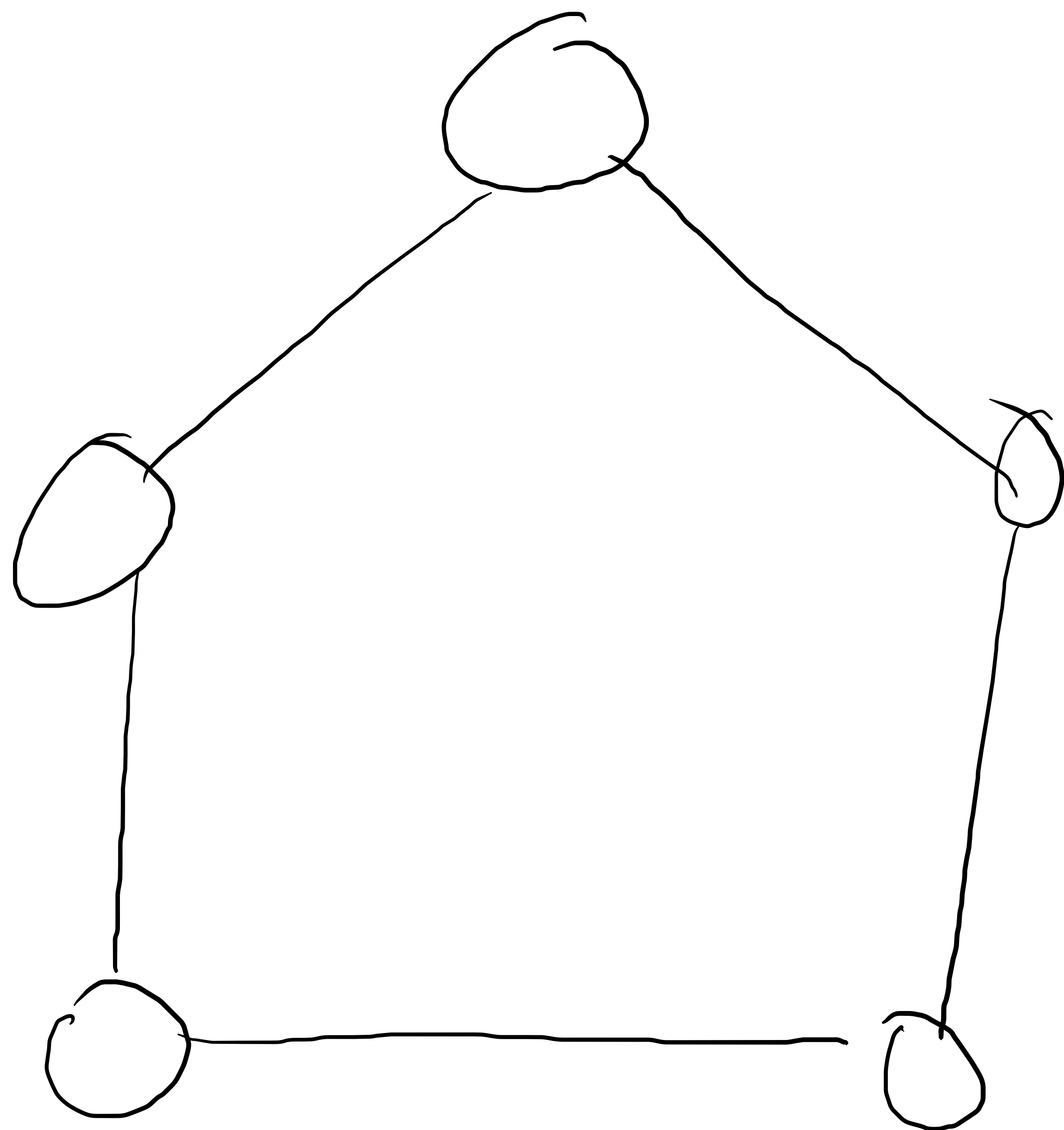


voir la solution

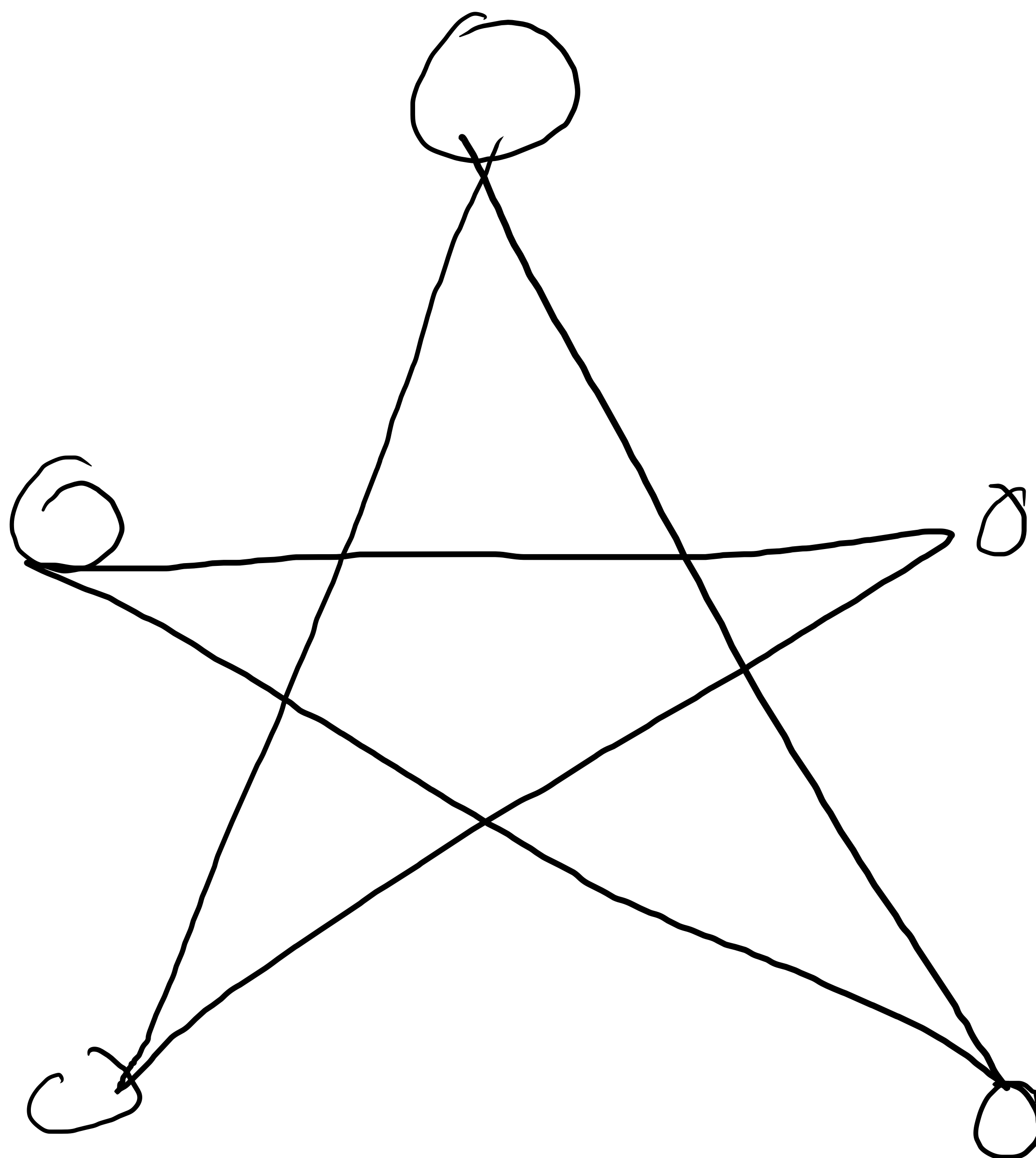
$$G = (S, A)$$

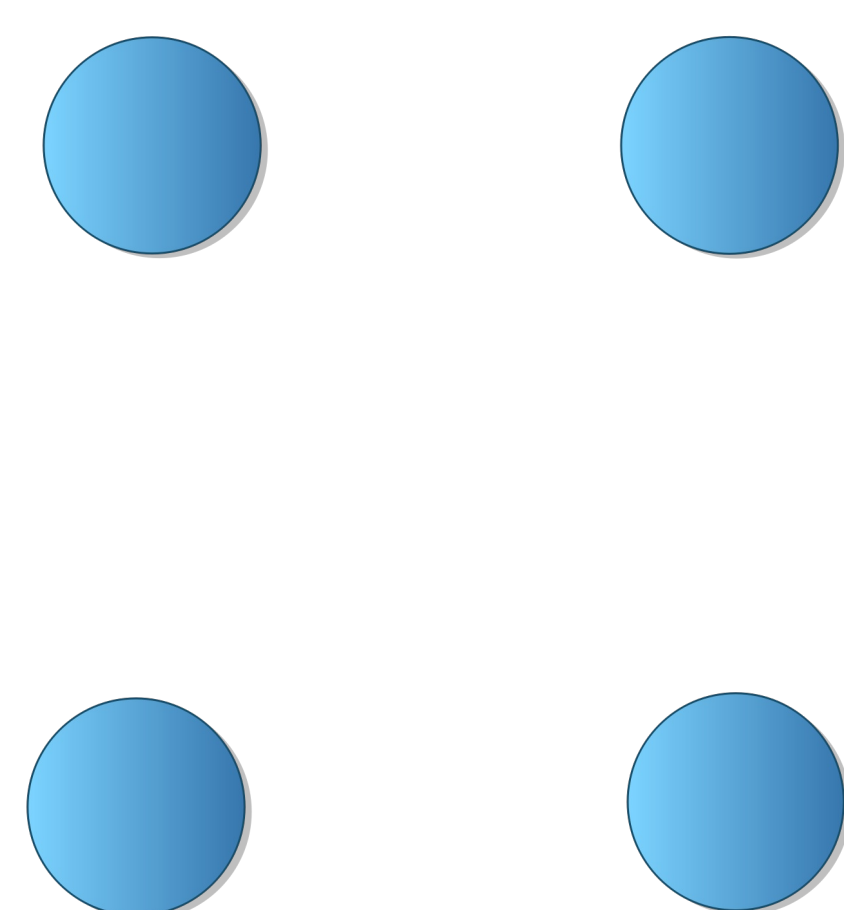
$$\sum_{x \in S} d(x) = 2K \neq \text{impair}$$

G

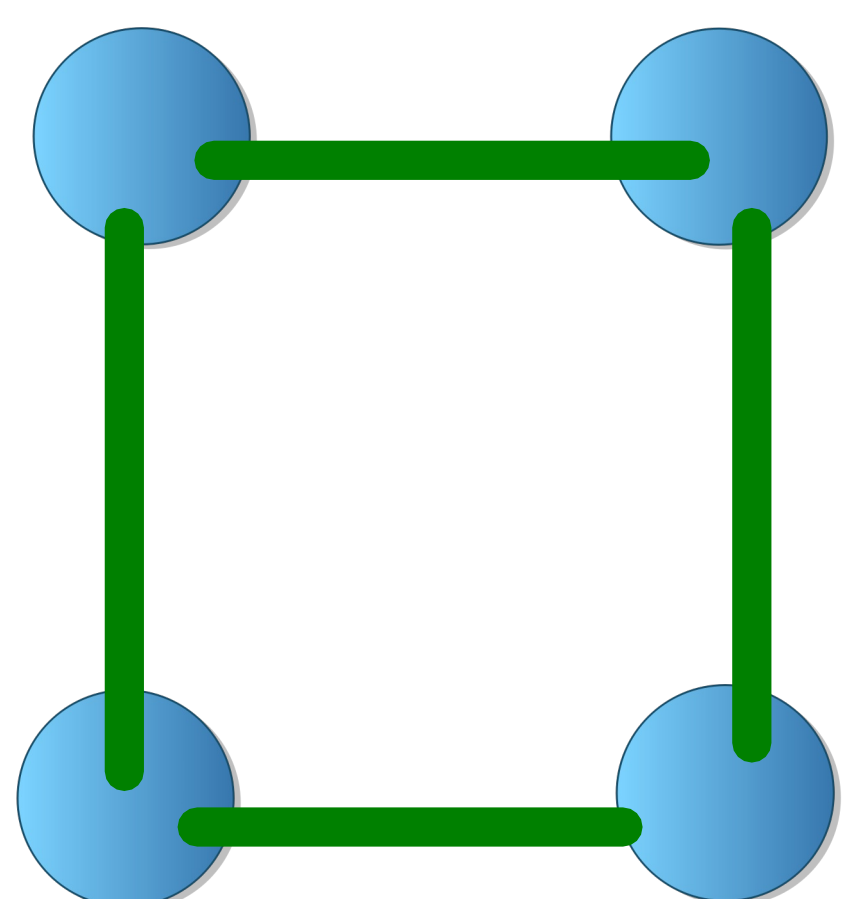
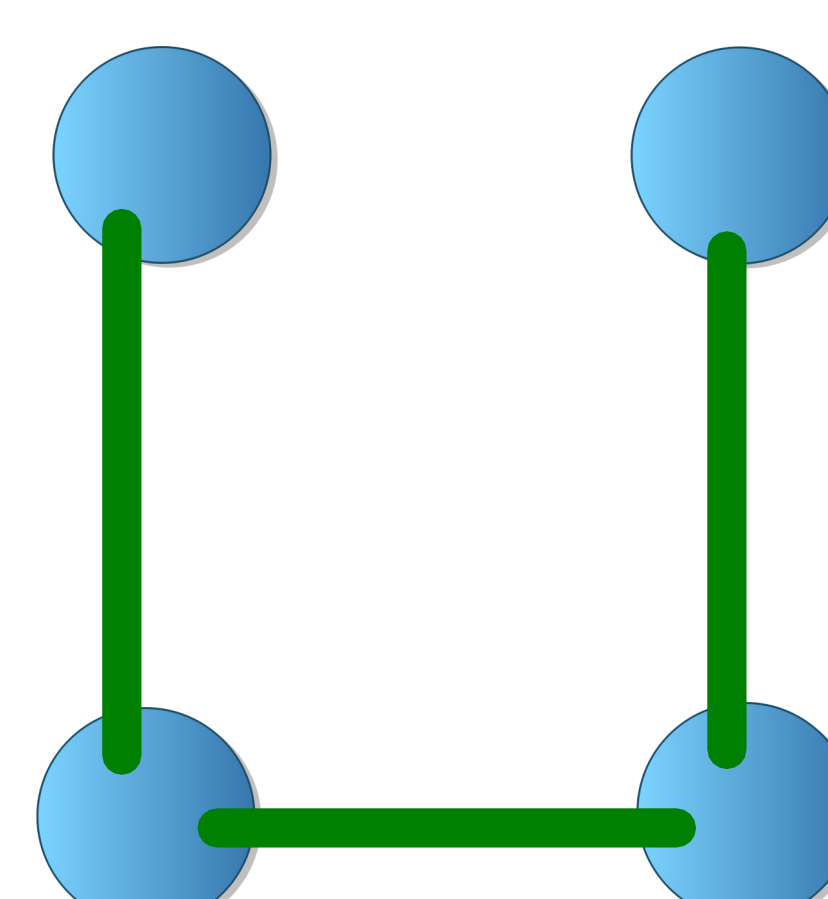
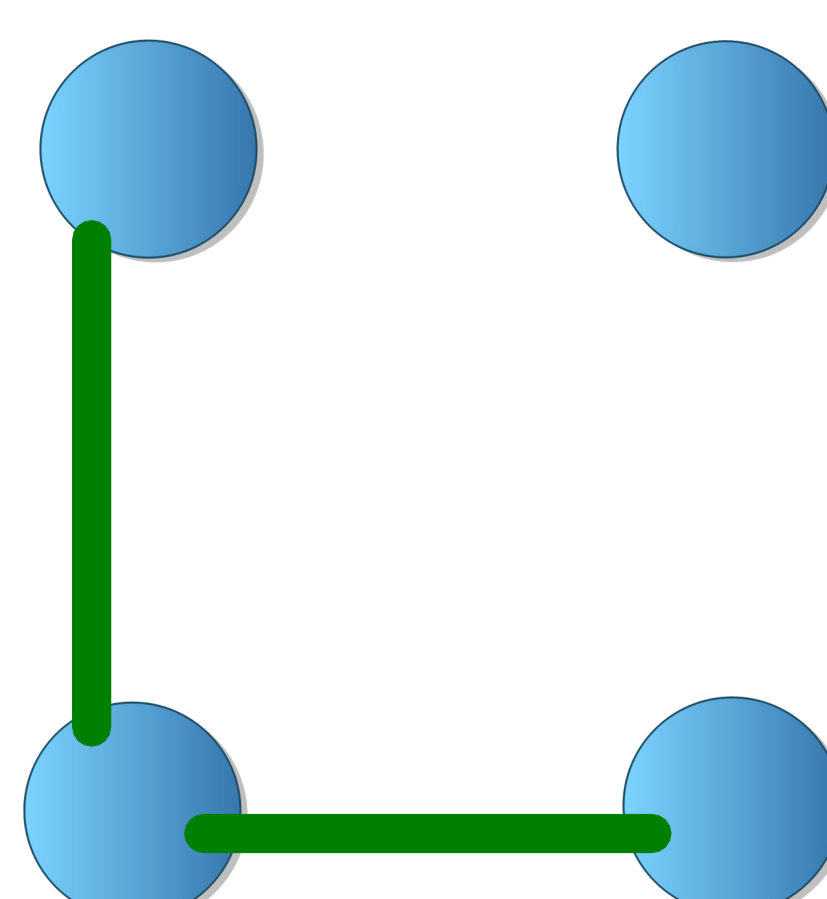
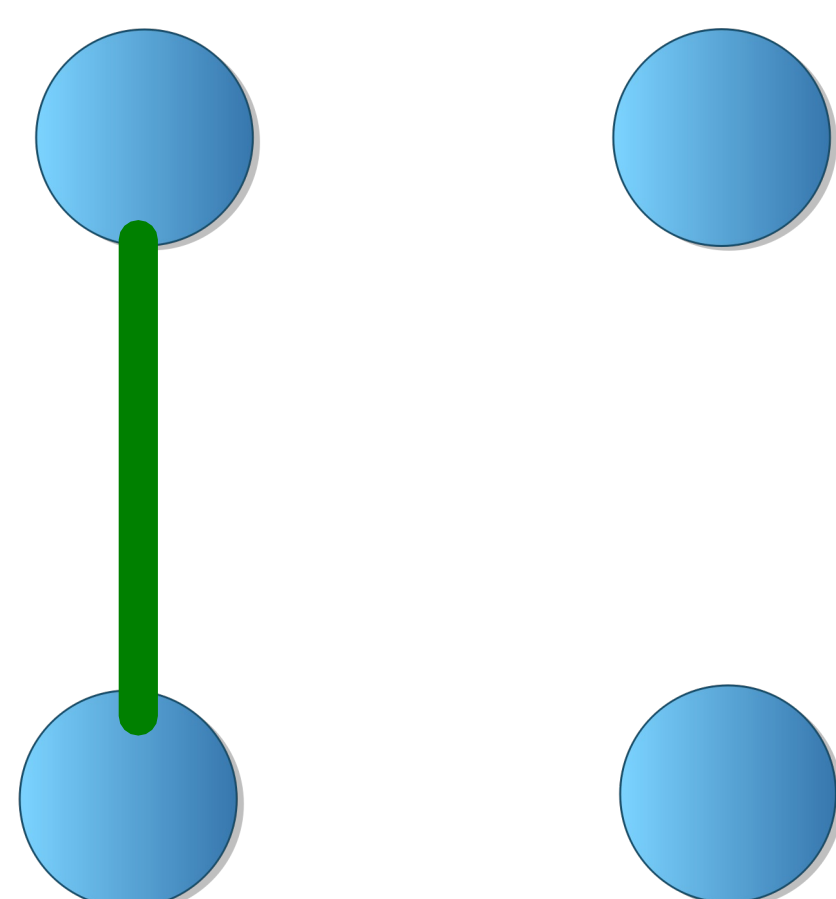


$\overline{G}$

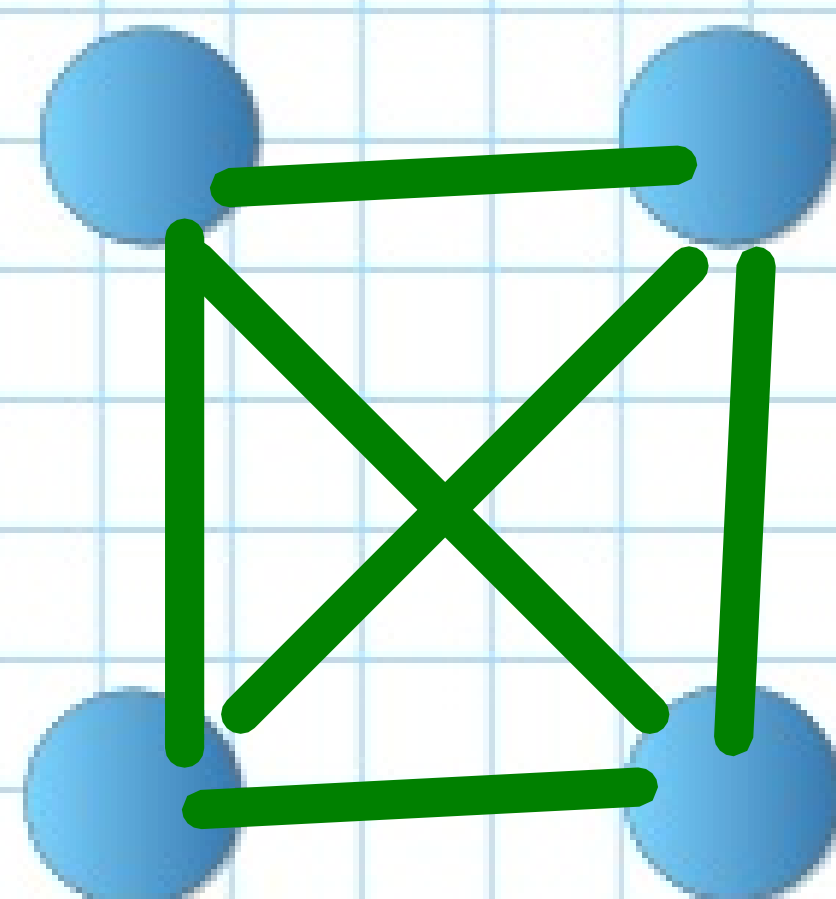
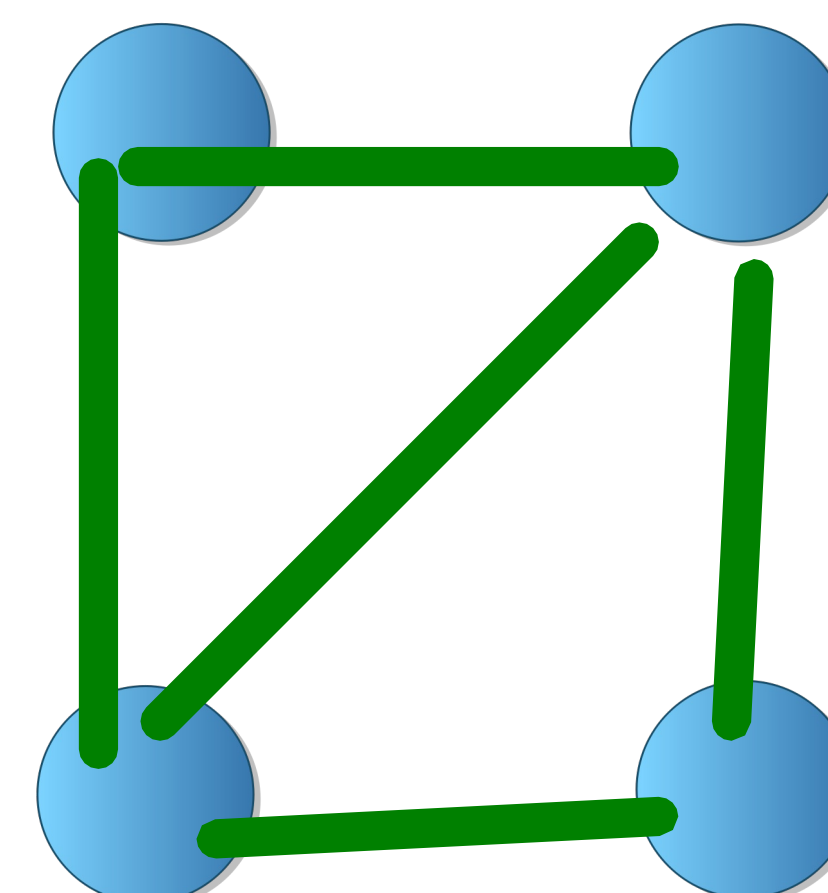
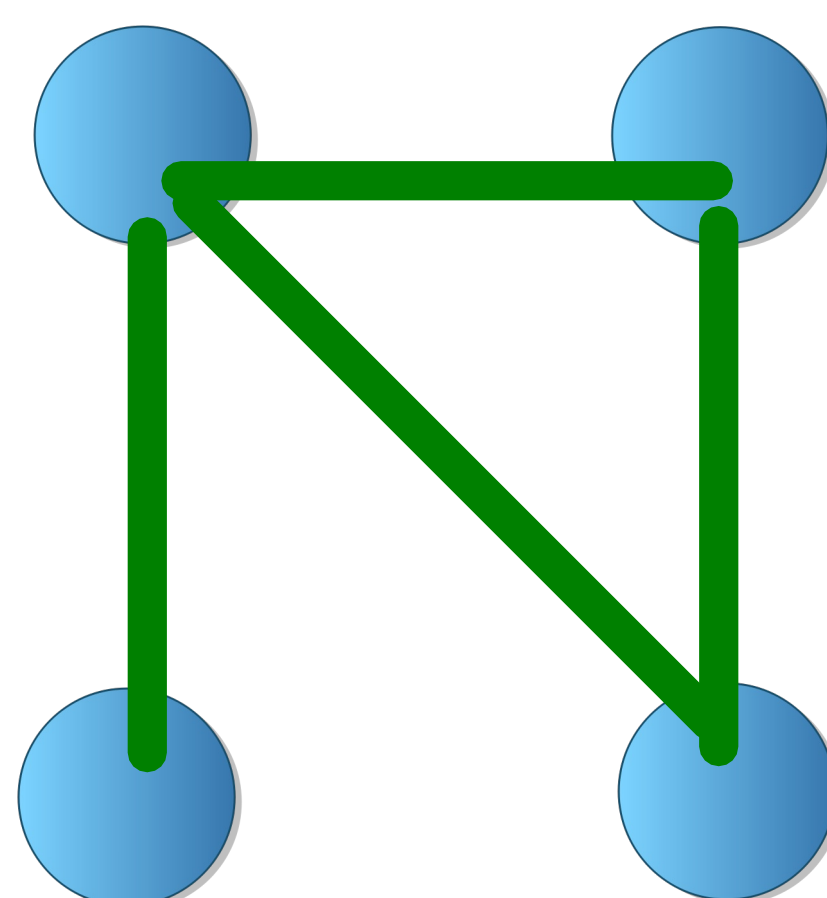
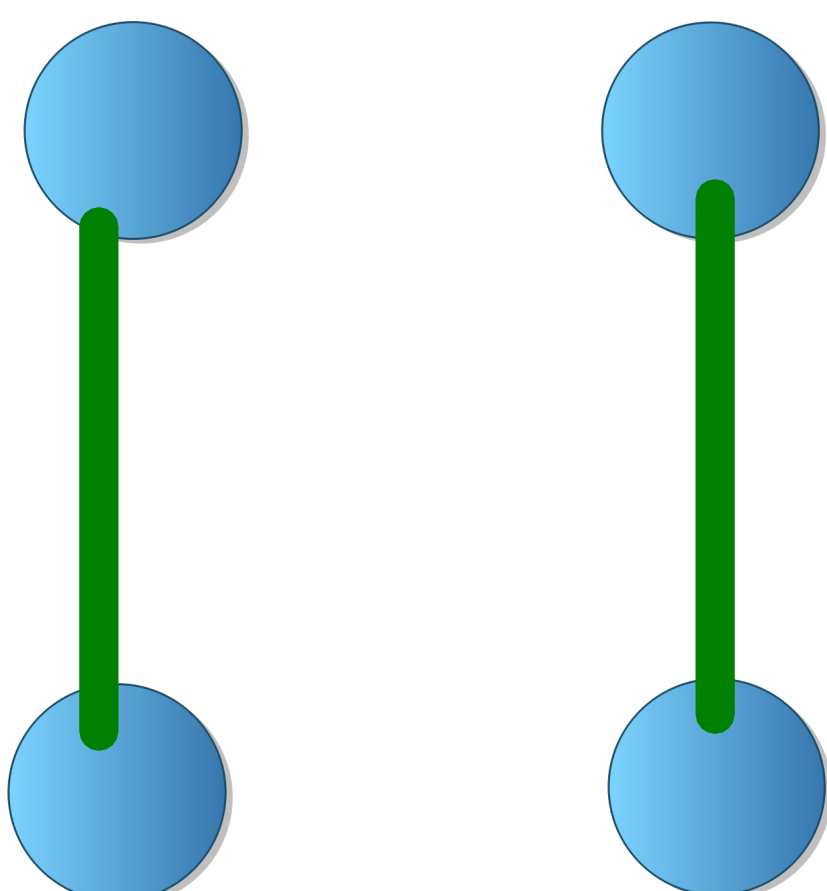




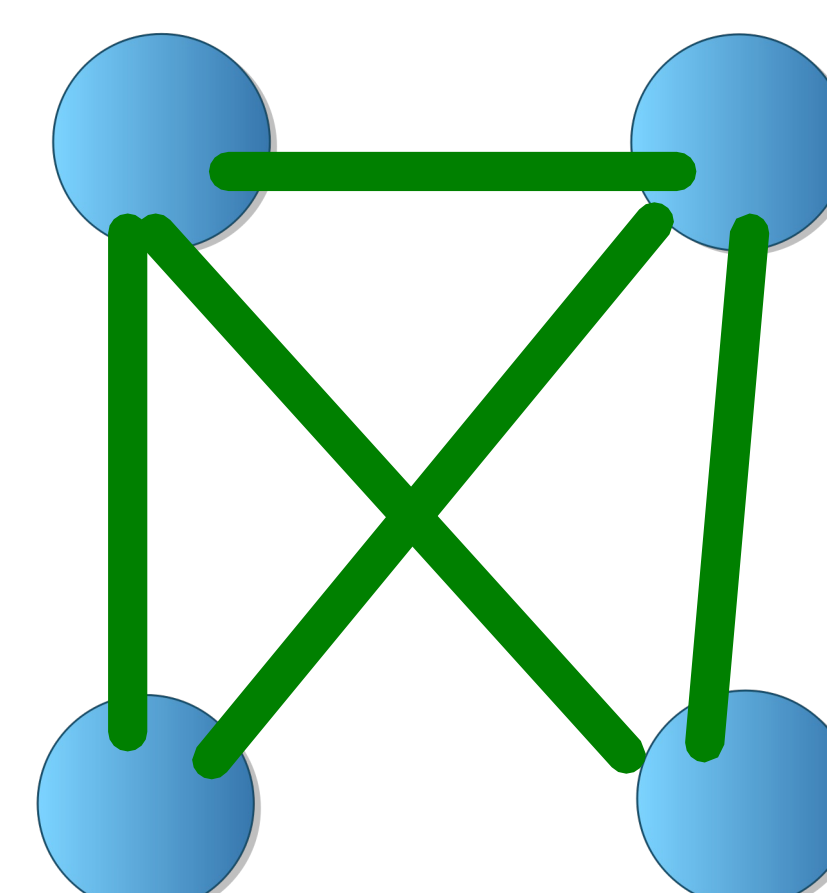
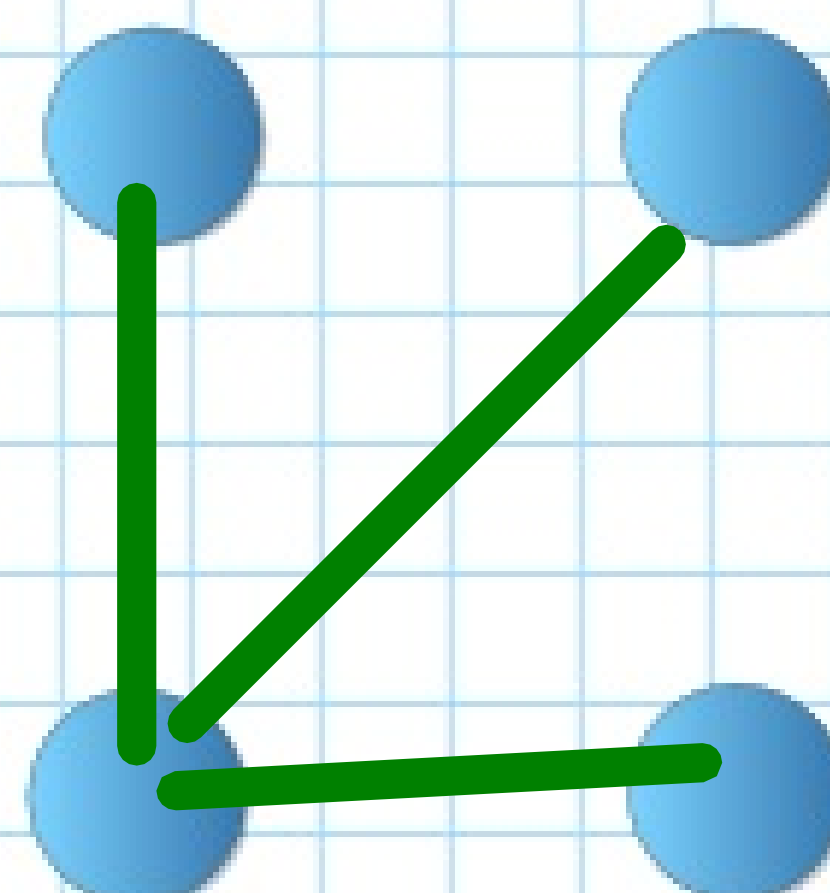
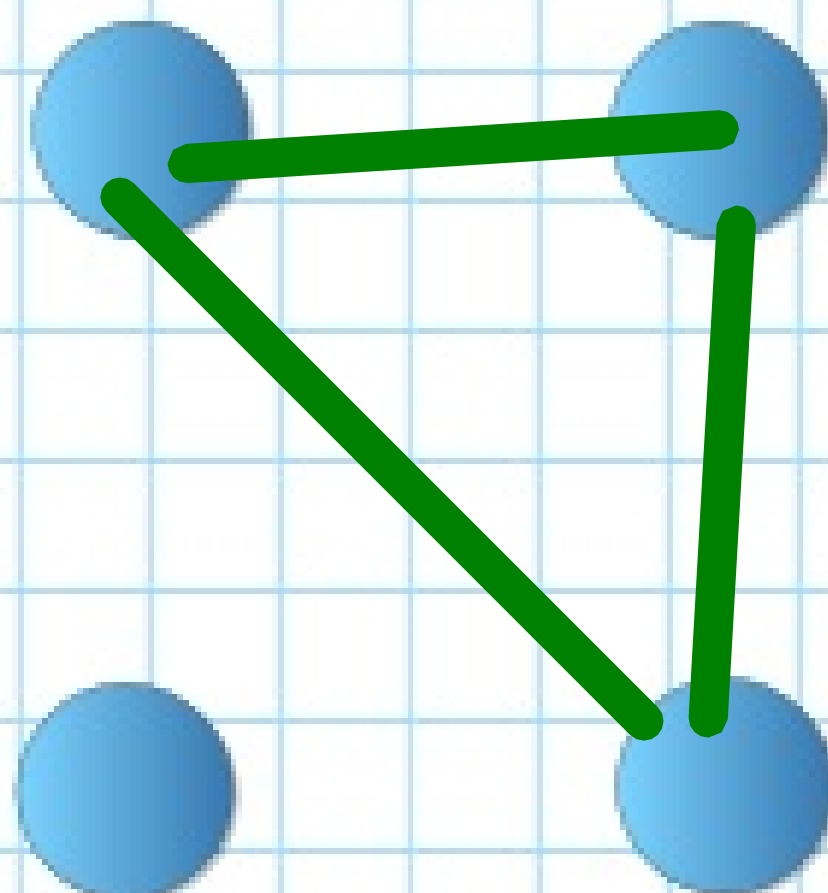
N_4



C_4



K_4



Définition 18 (Isomorphisme de graphes)

Soit $G_1 = (E_1, V_1)$ et $G_2 = (E_2, V_2)$ deux graphes. Un isomorphisme de graphe de G_1 dans G_2 est une bijection ϕ de E_1 dans E_2 qui vérifie :

$$(i, j) \in V_1 \Leftrightarrow (\phi(i), \phi(j)) \in V_2$$

