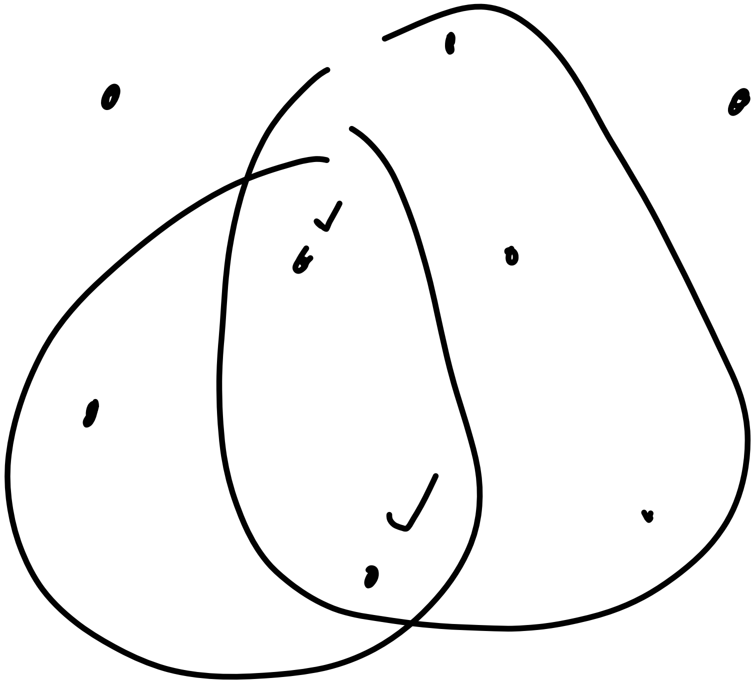
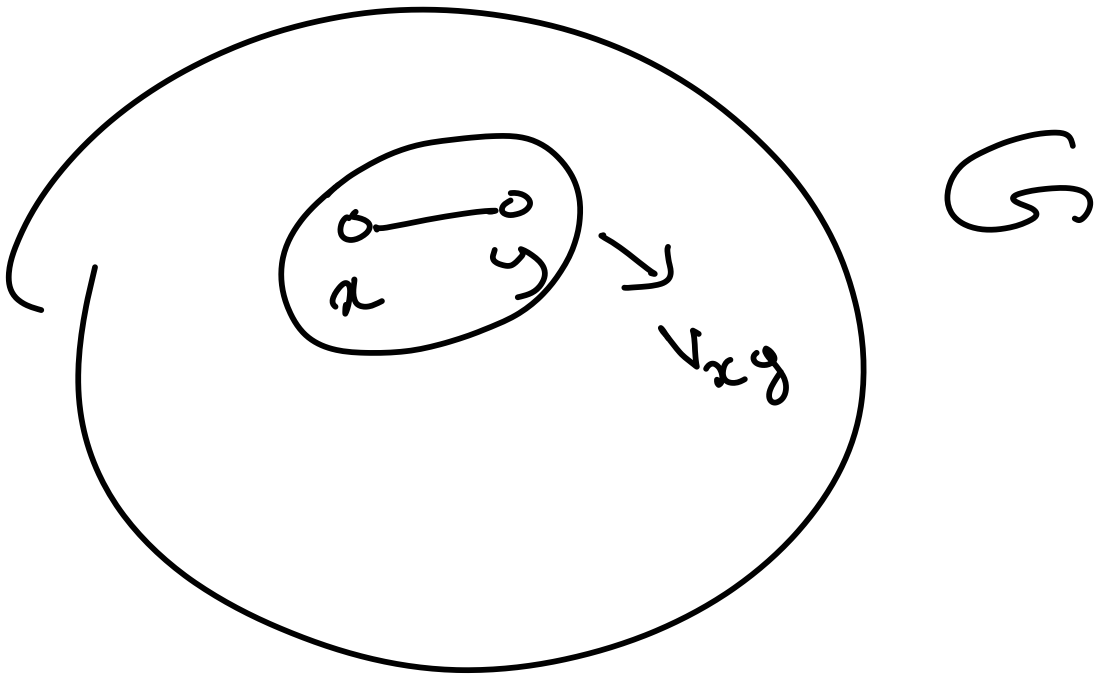
$G = (V, E)$ $\quad A, B$



"t"

$k(A, B, G) \geq \underline{\underline{t}}$

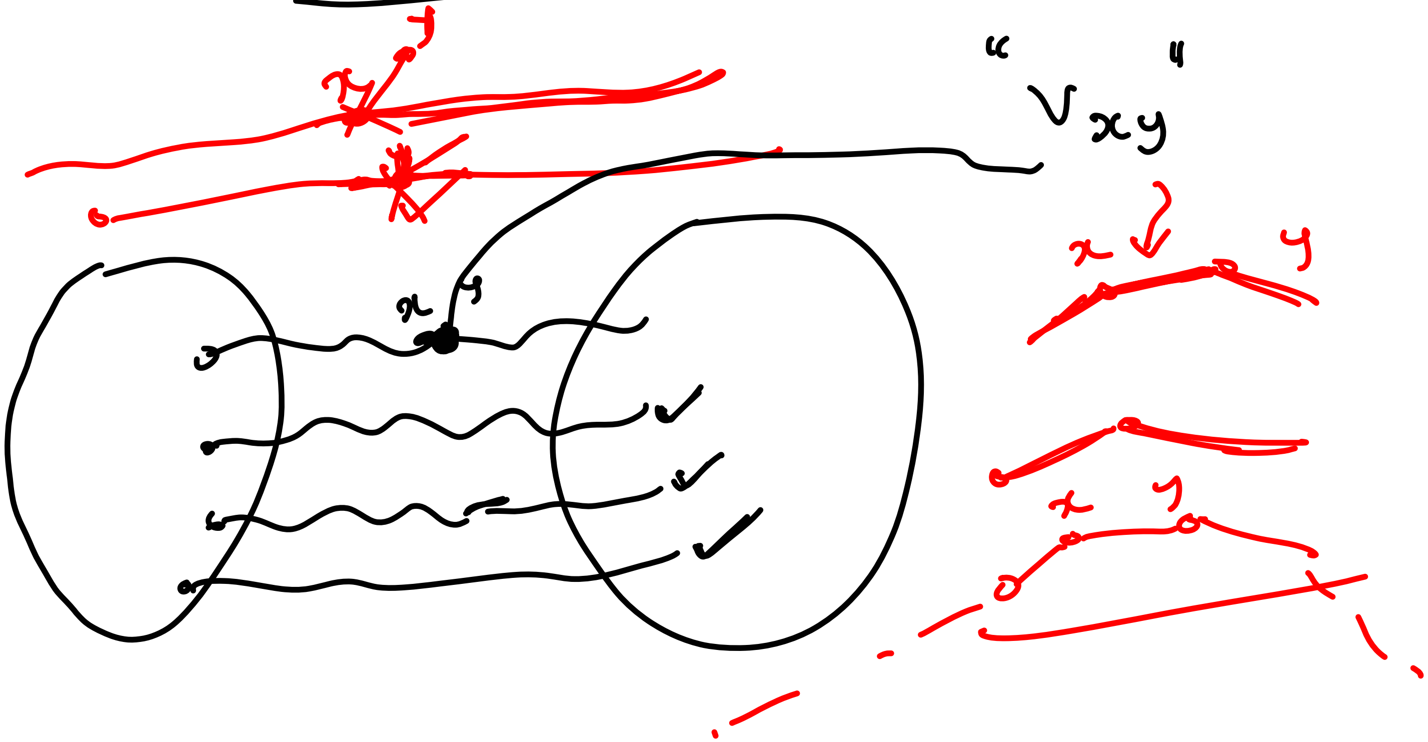
$$|A \cap B| = k(A, B, G)$$



$$x, y \longrightarrow V_{xy}$$

$$\text{"}K\text{"} = K(A, B, G)$$

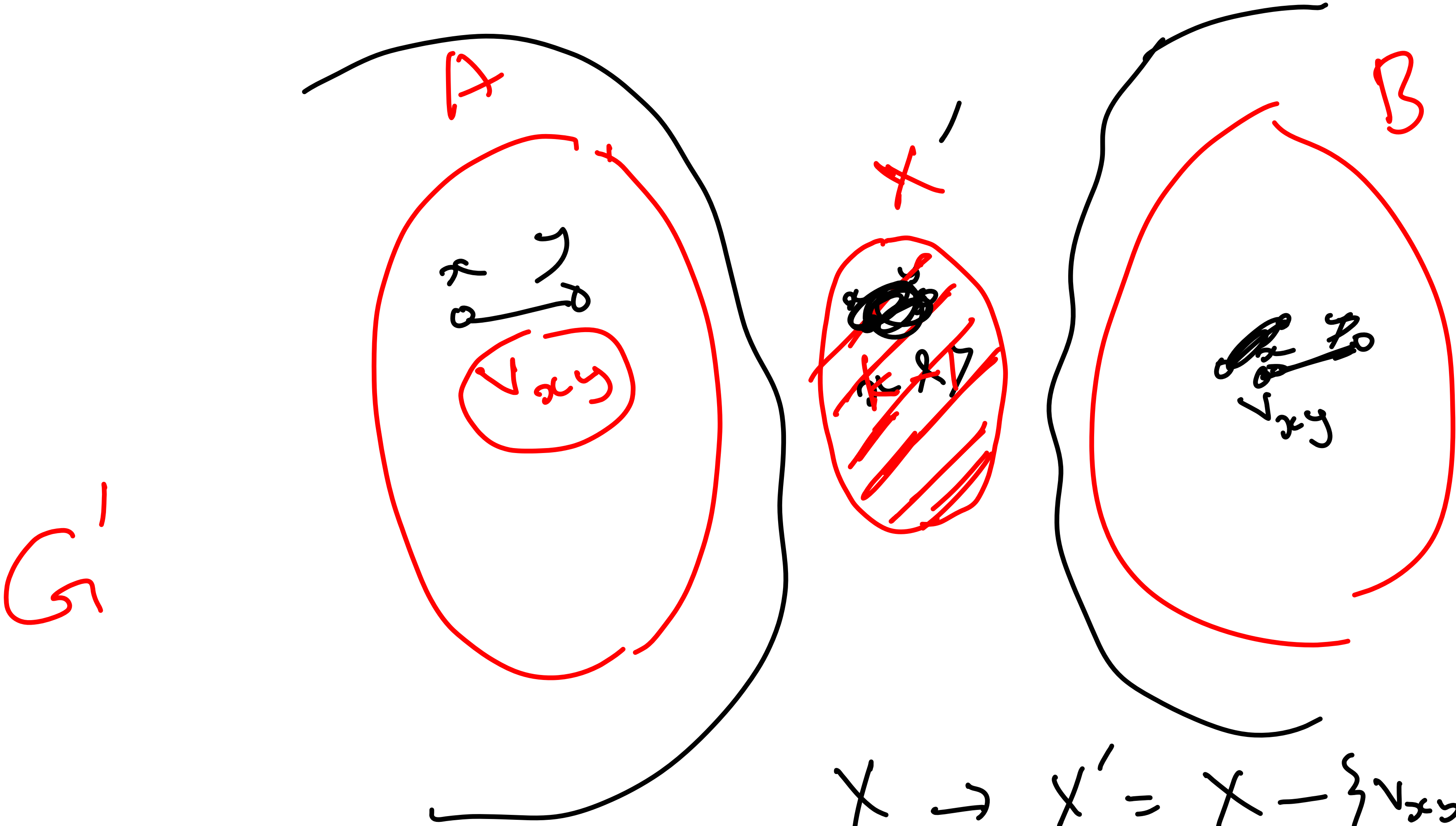
G'



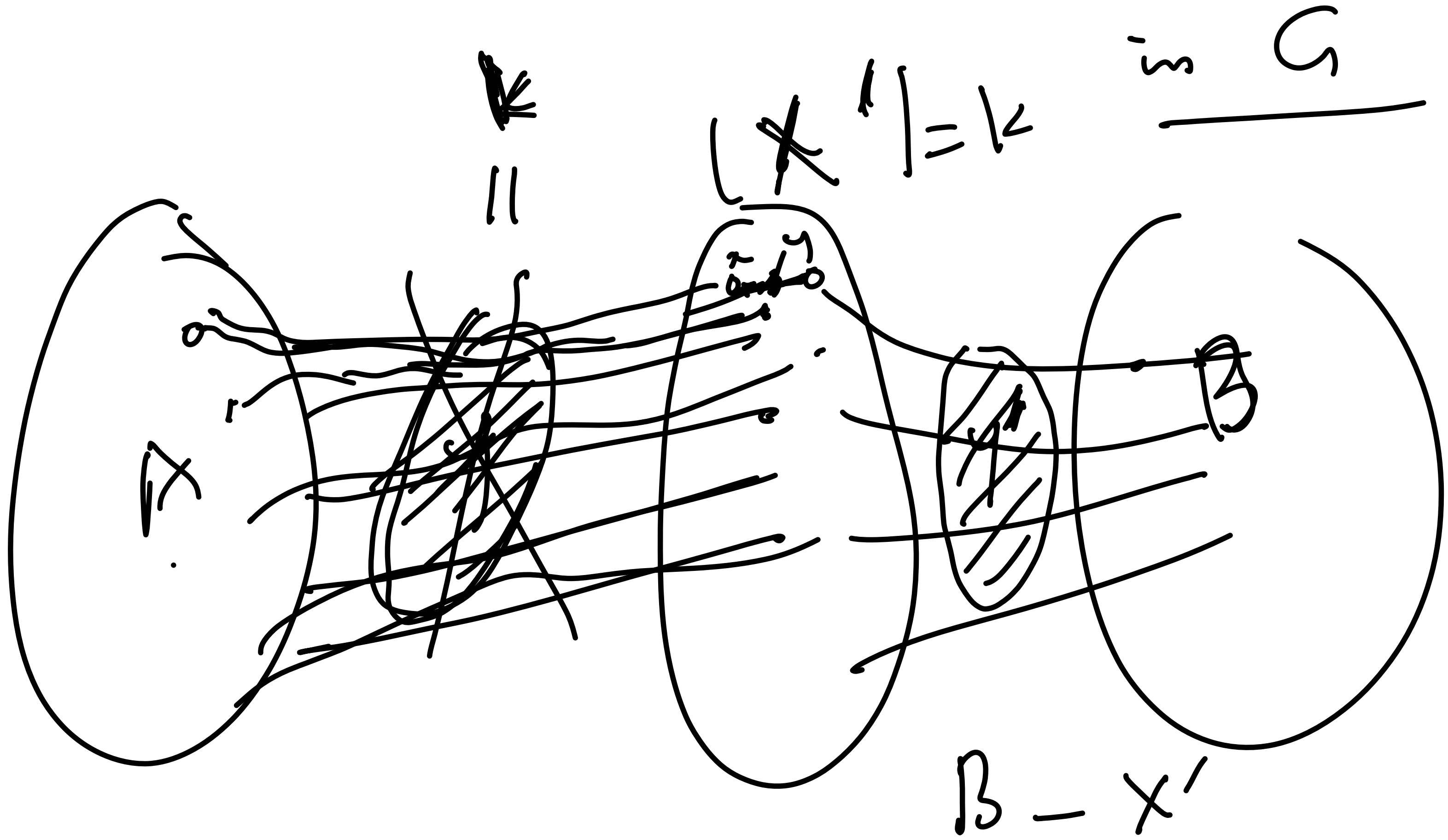
G' also does not have

k A-B paths.

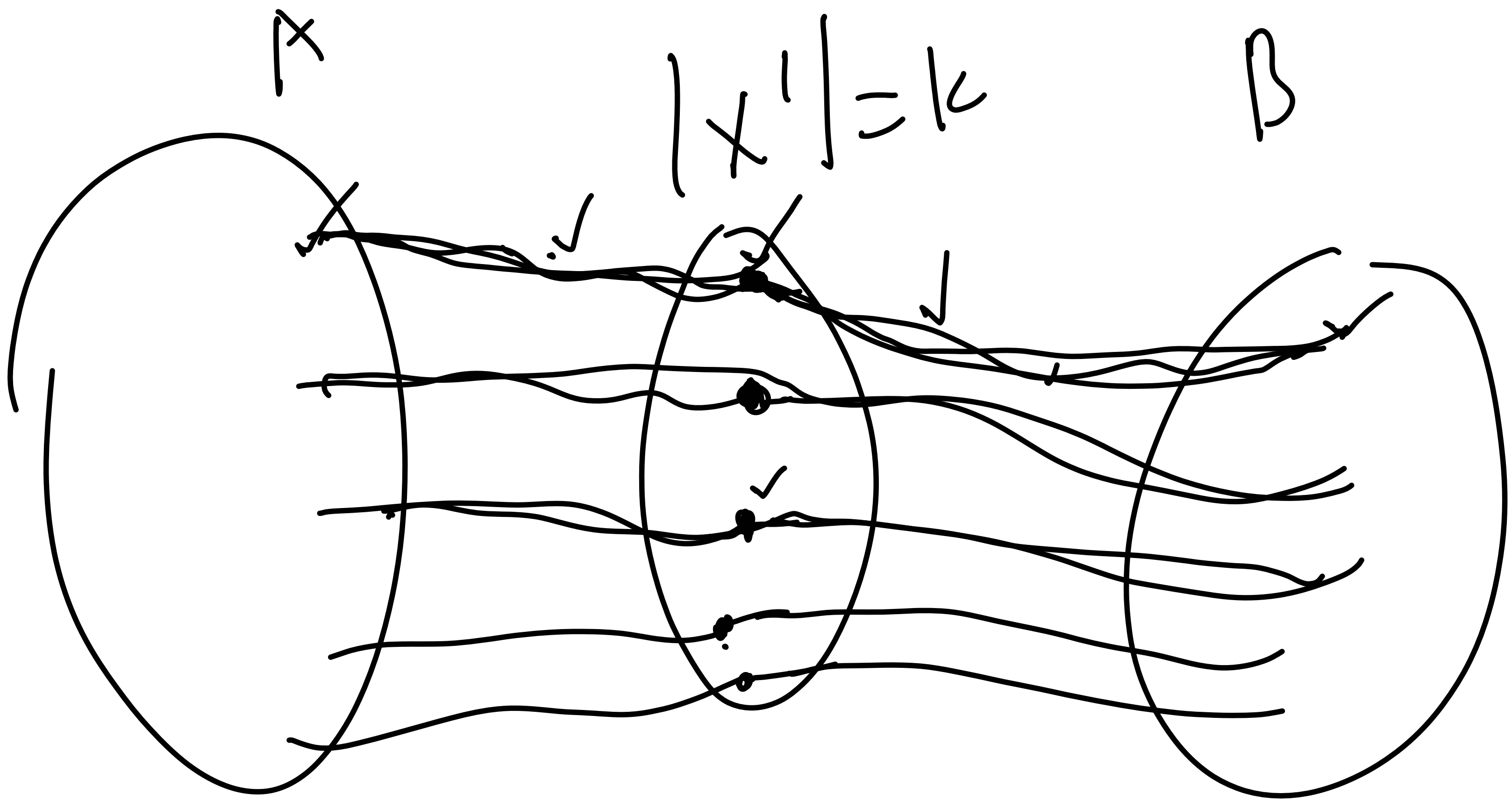
"$k-1$" A-B paths



$$X \to X' = X - \{v_{xy}\} \cup \{x, y\}$$

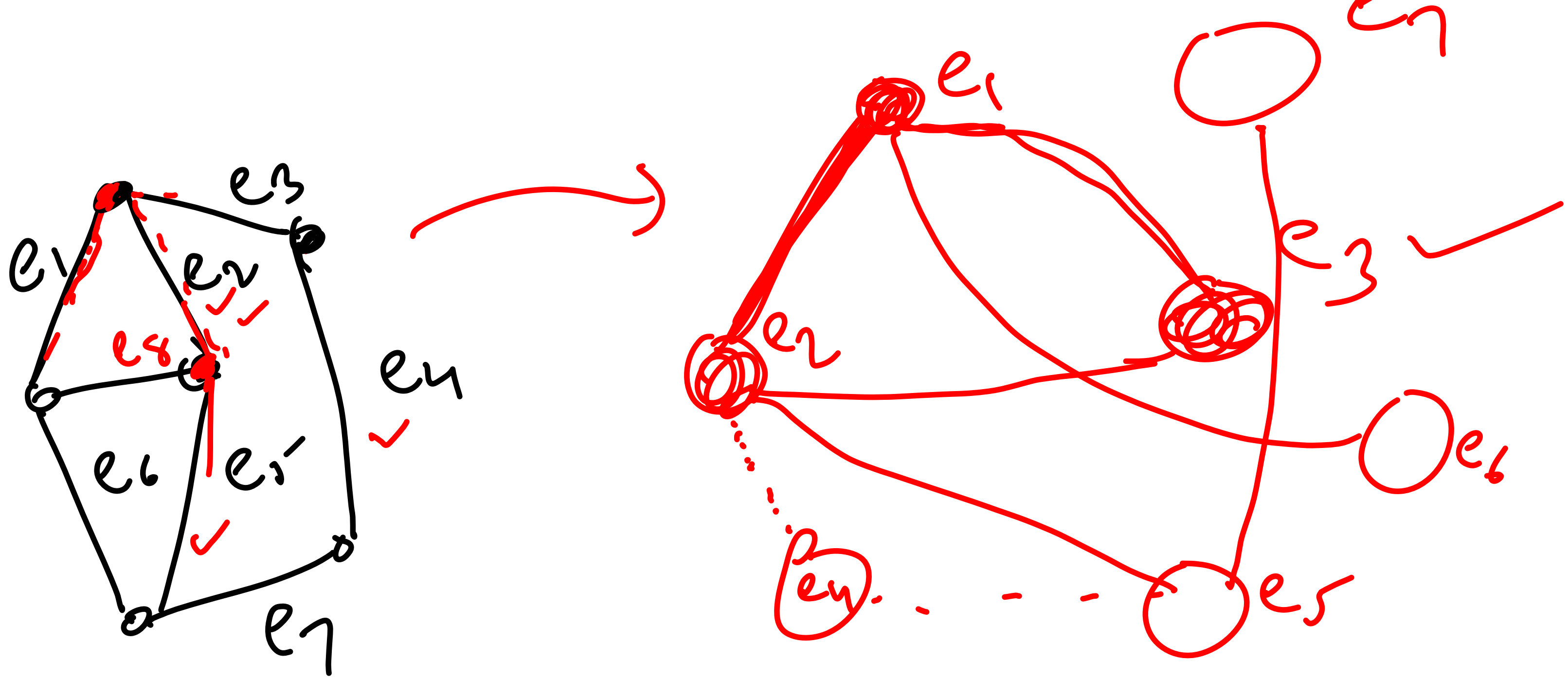


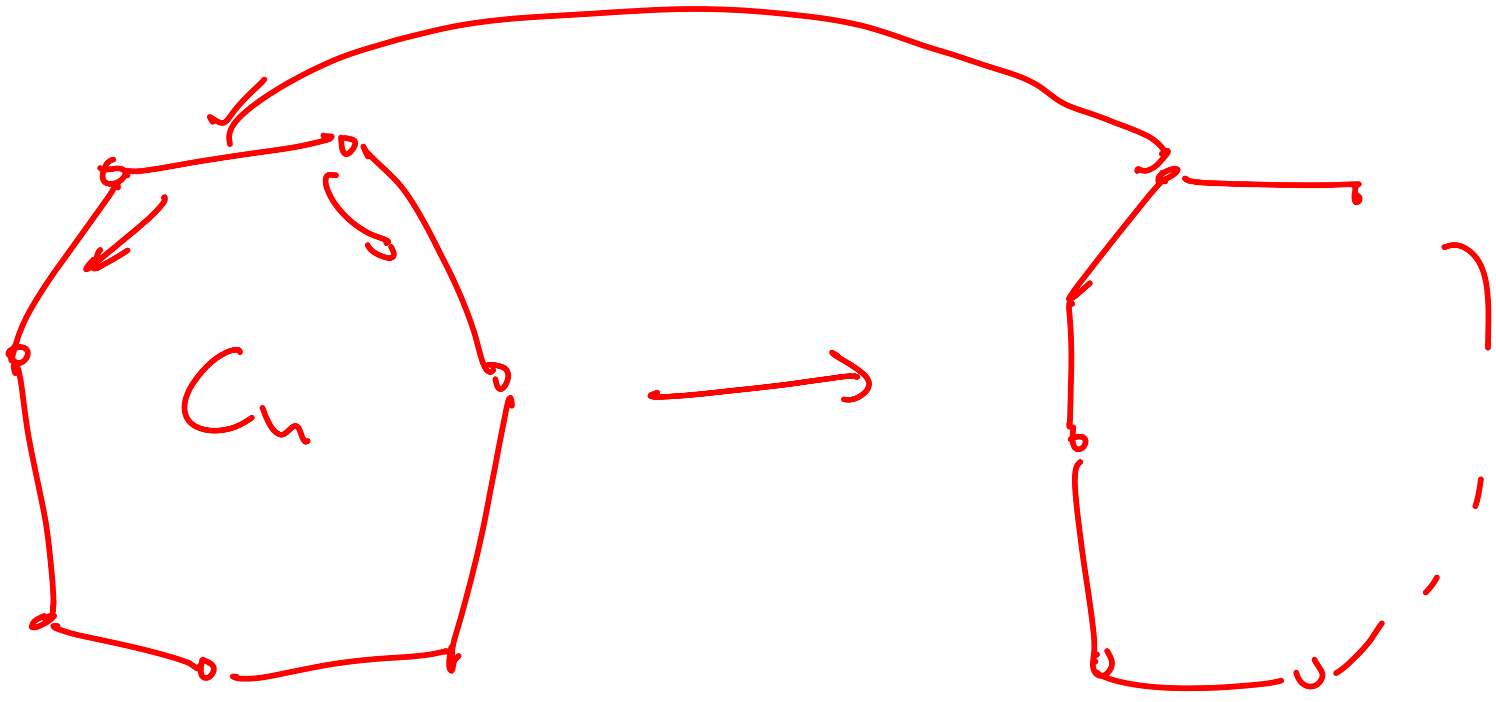
A − X' separator in G



k disjoint paths

Line graph construction




C_n

$$K_n \longrightarrow L(K_n)$$

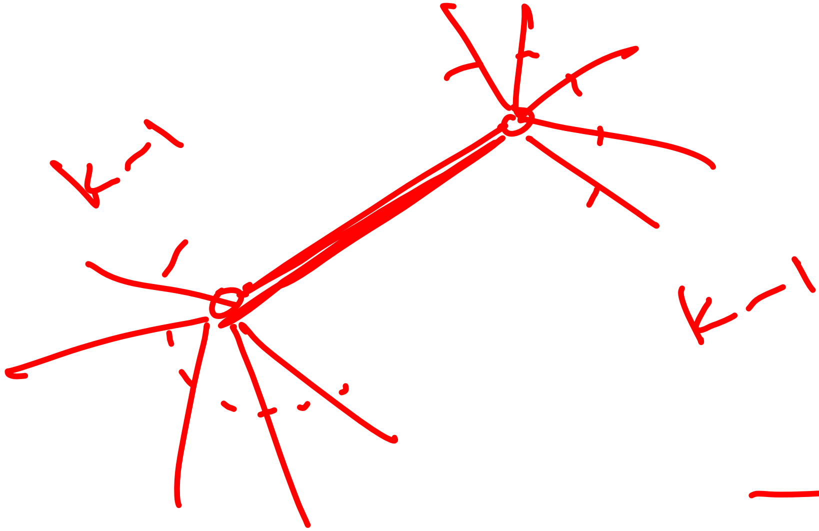
$$G \longrightarrow L(G)$$

$$\binom{n}{2}$$

k-regular graph G

$\frac{nk}{2}$ edges in G.

$\frac{nk}{2}$ vertices in $L(G)$



$$\Longrightarrow \quad \underline{\underline{2k-2}}$$

$E(v)$ in G

clique in $L(G)$

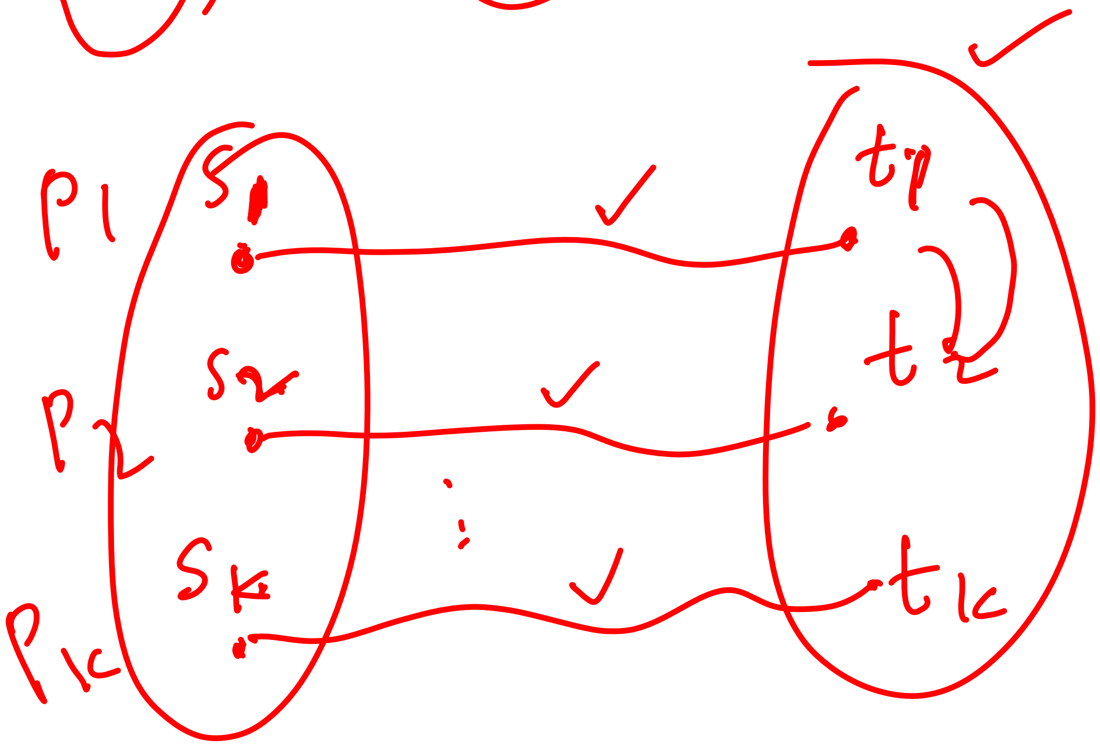
between

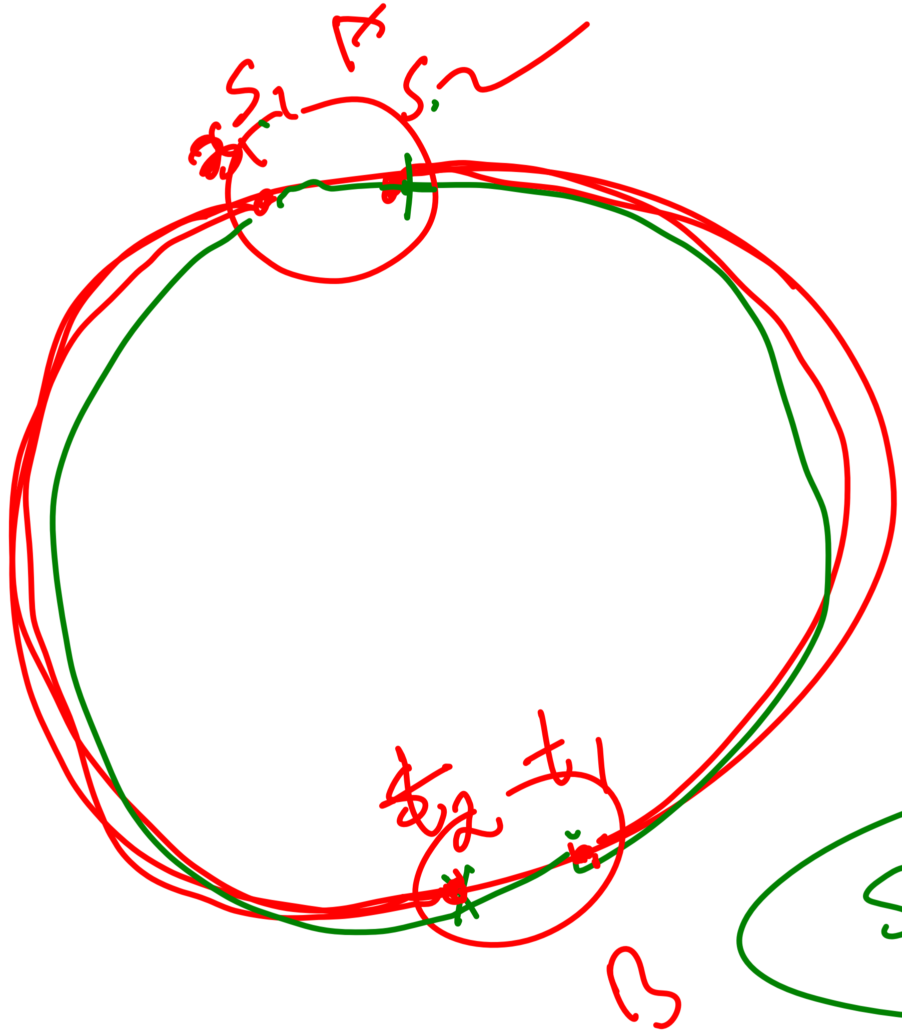
$E(a)$ and $E(b)$

The $\underline{A = E(a)}$ $\underline{B = E(b)}$

$a-b$ paths

k-connected

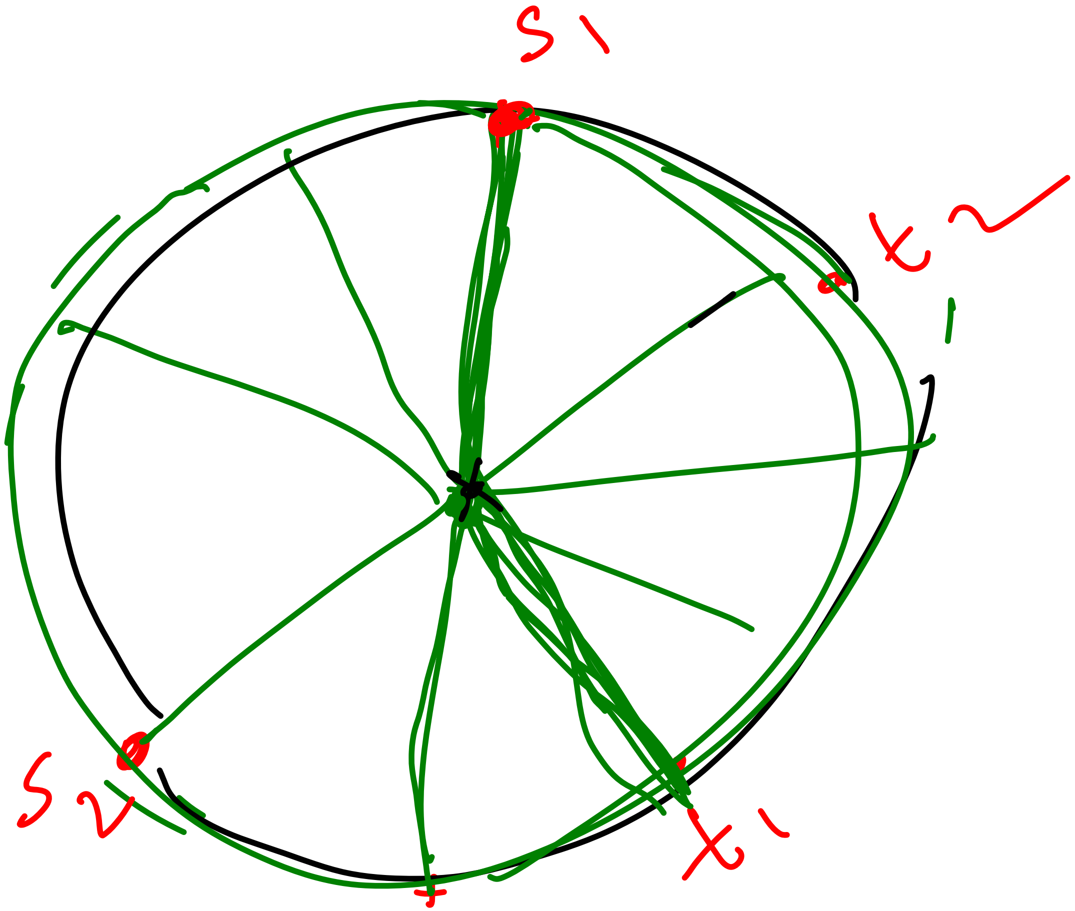




C_n

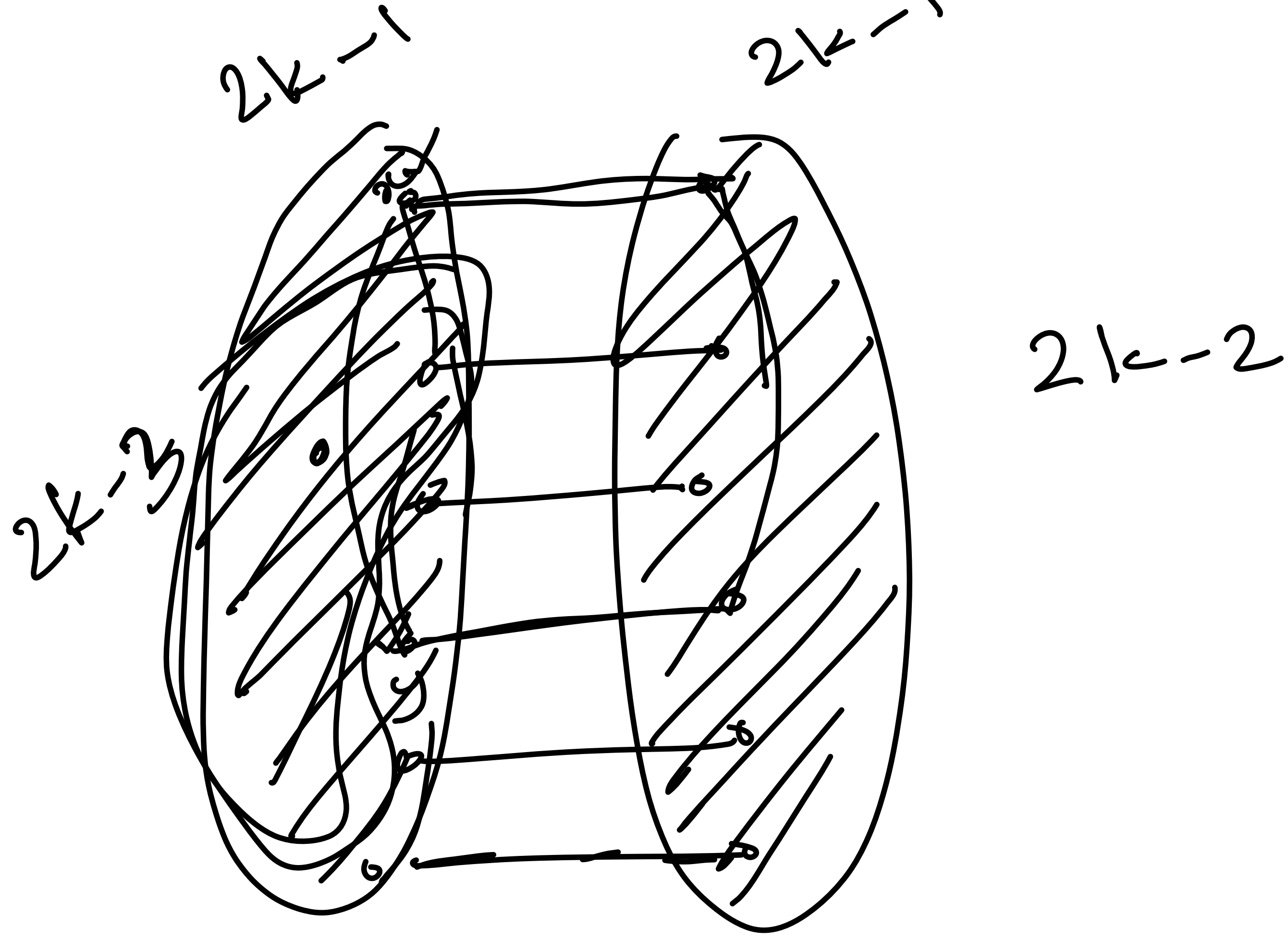
~~$s_1 \quad t_1$~~

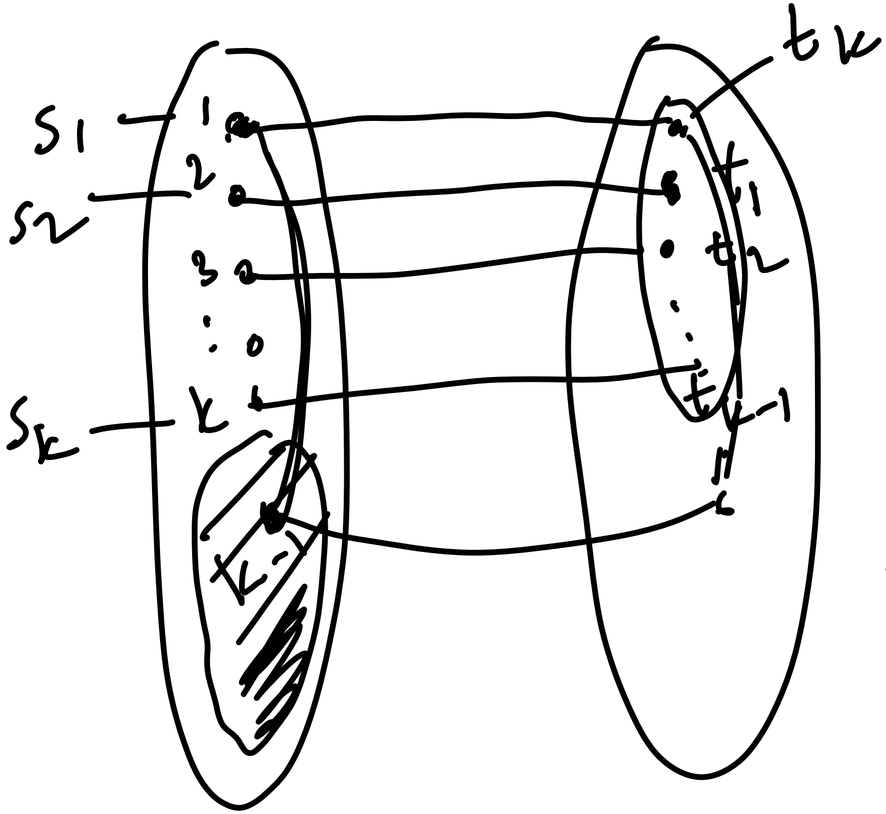
s_1, s_2, t_1, t_2


s1
t2
s2
t1


n/2
n/2
K_n

Suppose the graph is to be k-linked, then how high should be the connectivity to guarantee this?


2k-1
2k-1
2k-3
2k-2



s1
s2
sk
1
2
3
k
k-1
tk
t1
t2
tk-1