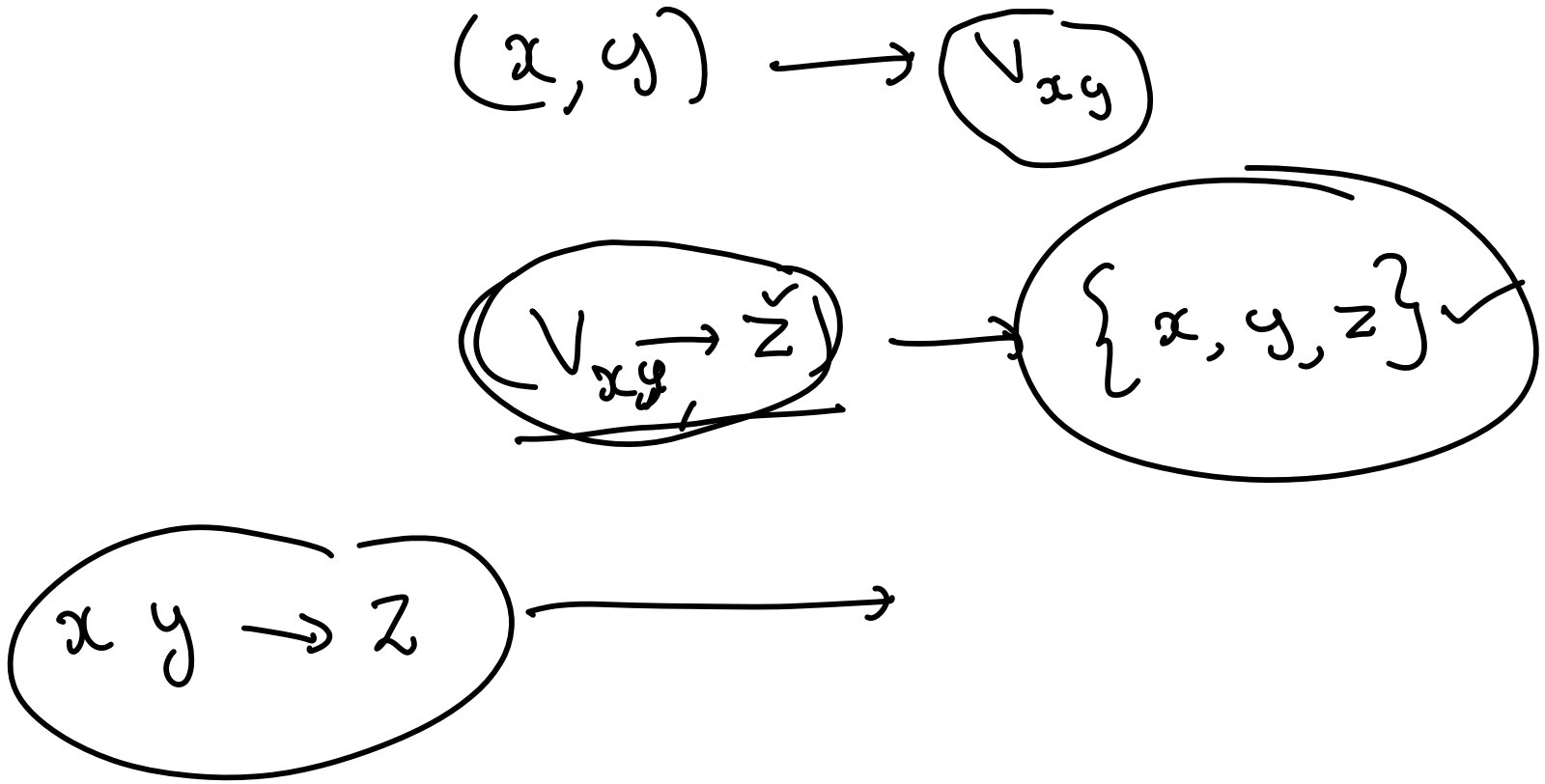
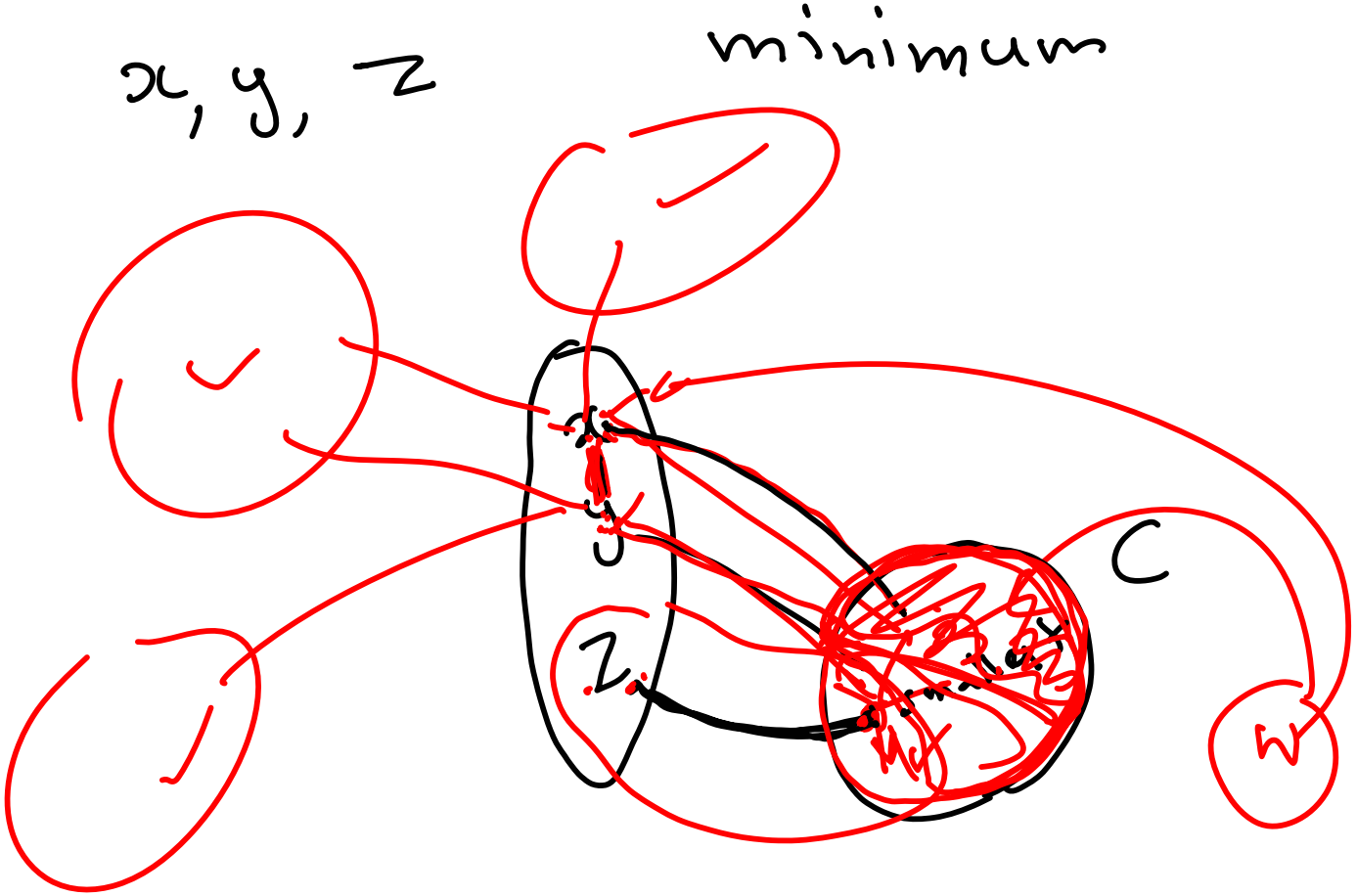
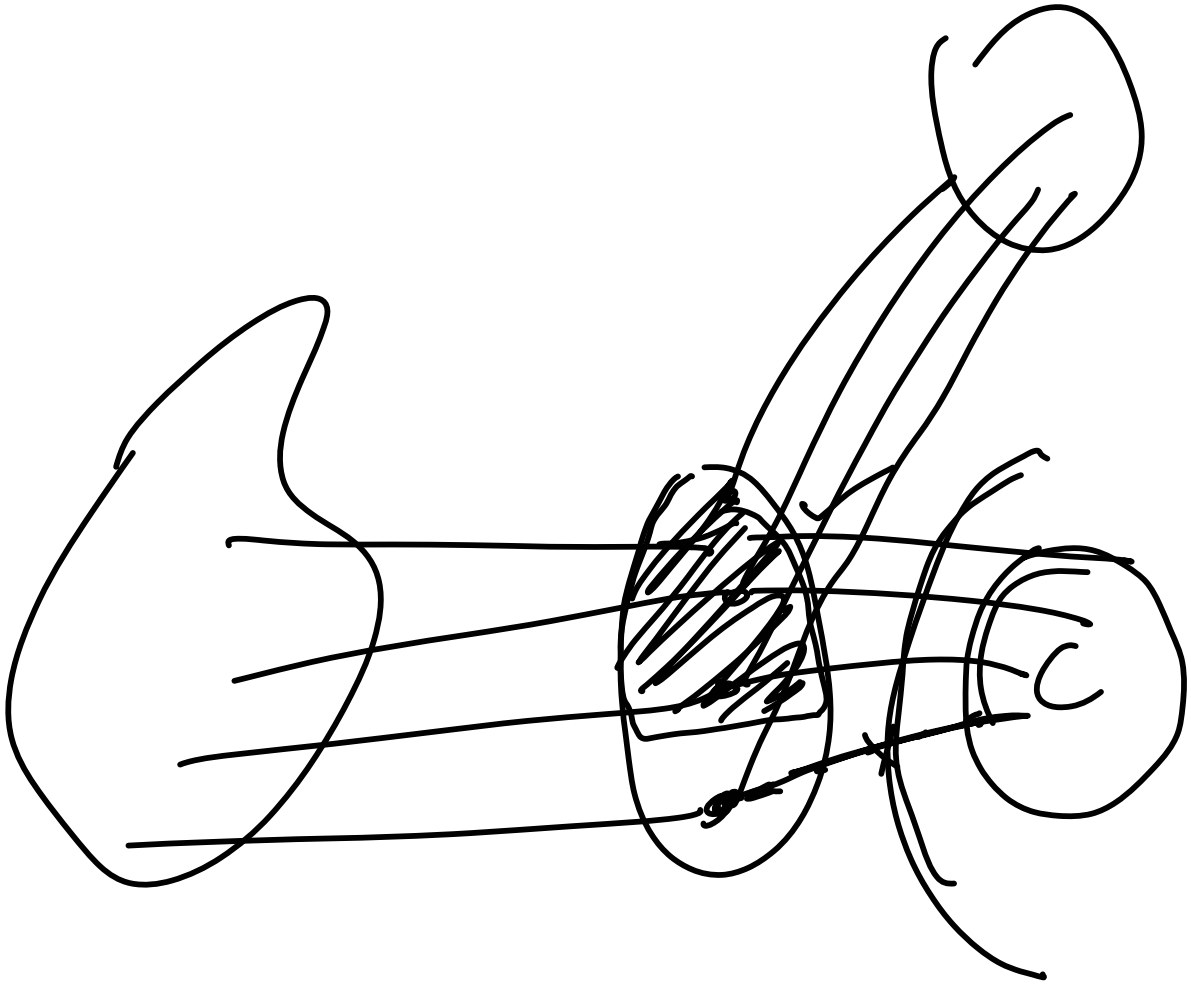
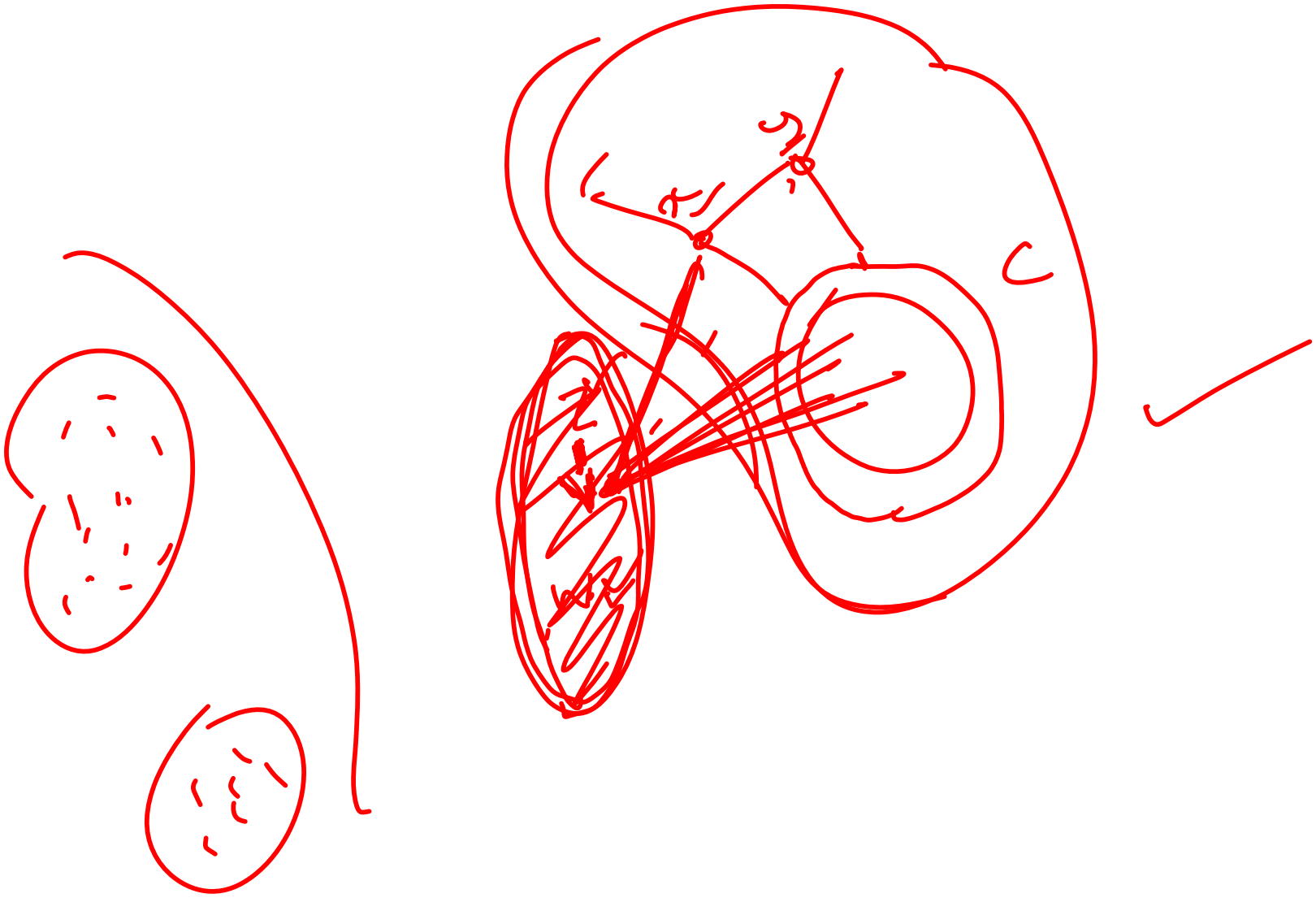
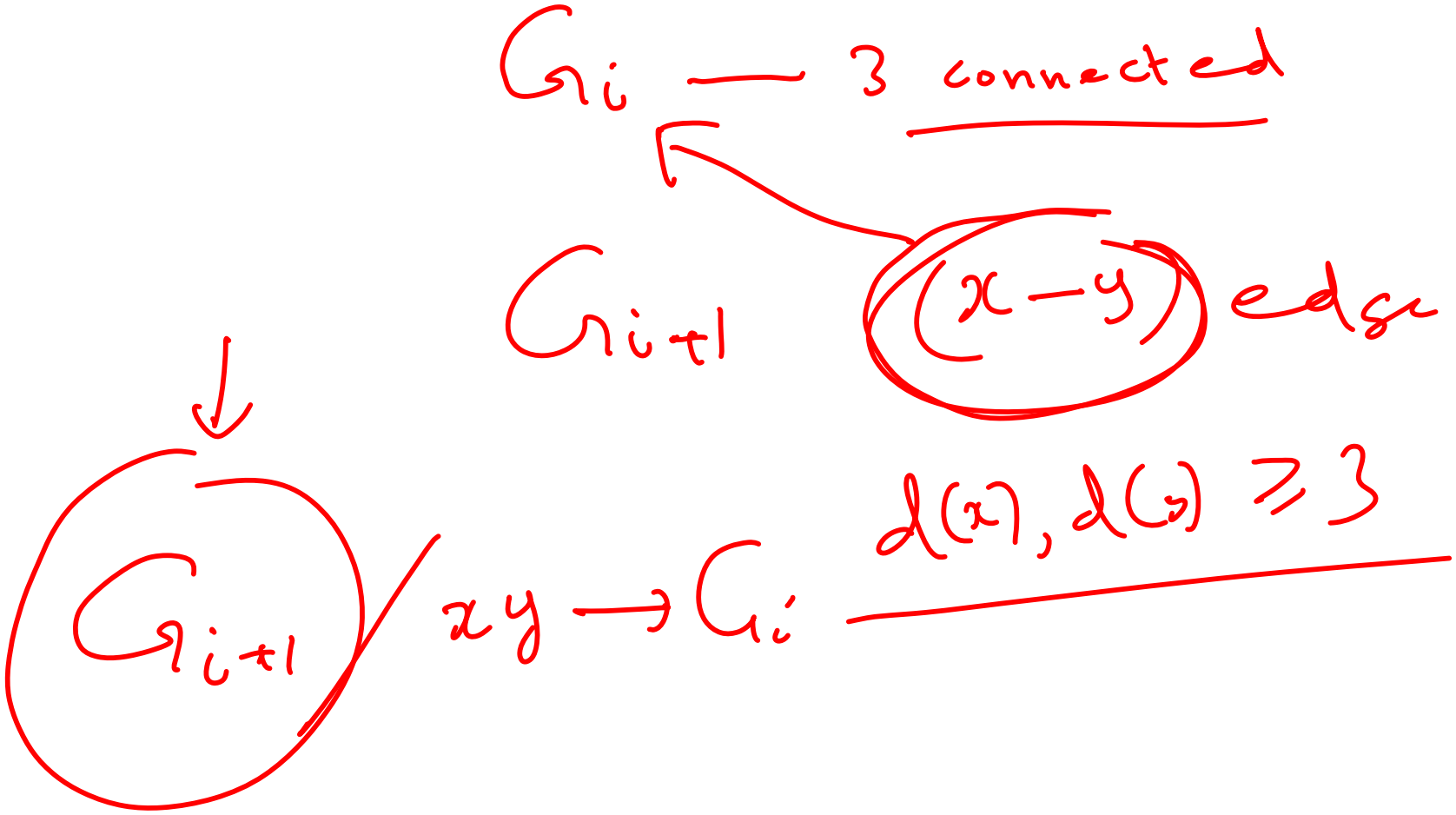
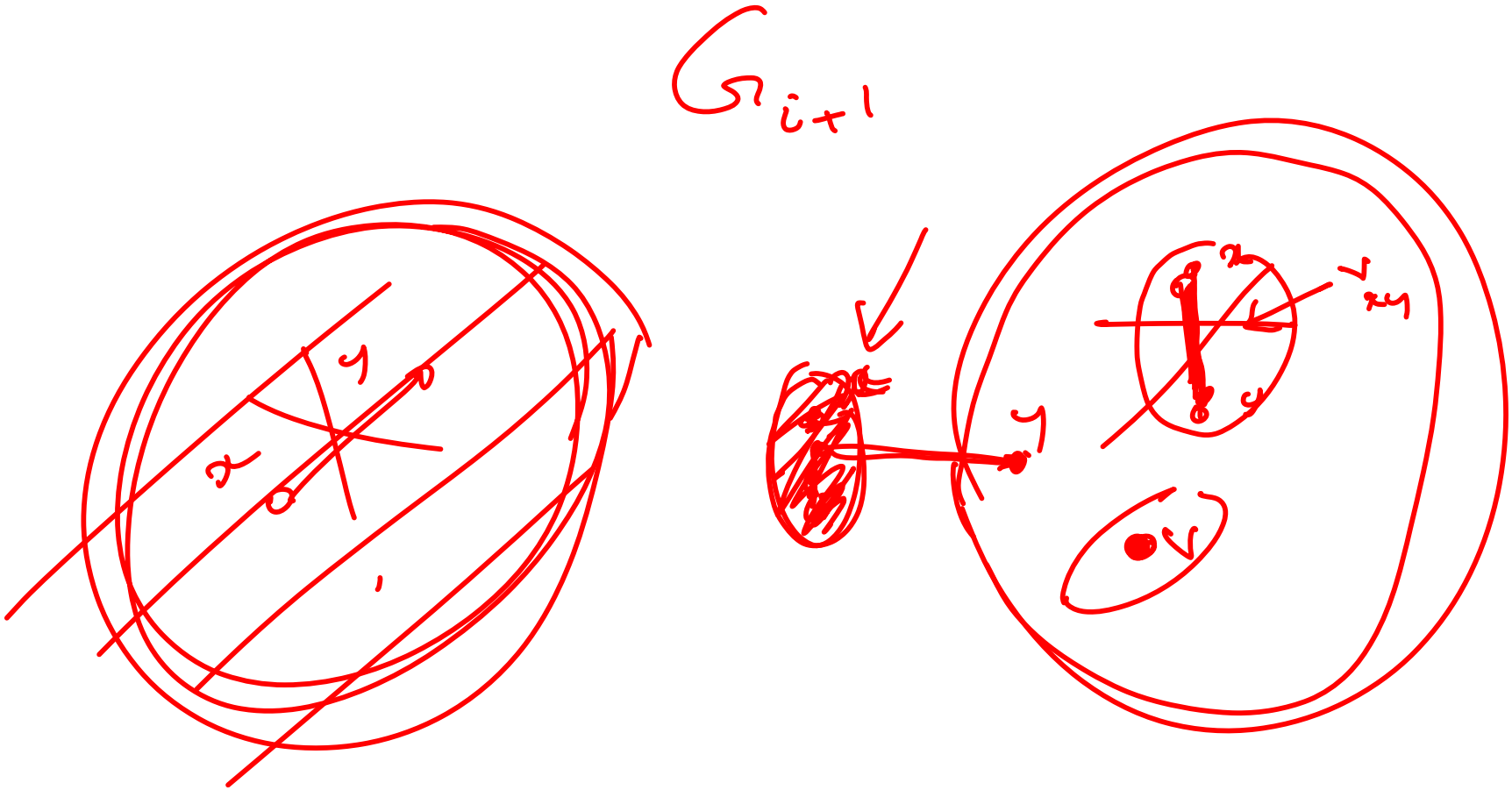

(x, y)
V_{xy}
$V_{xy} \rightarrow z$
{x, y, z}
x y → z

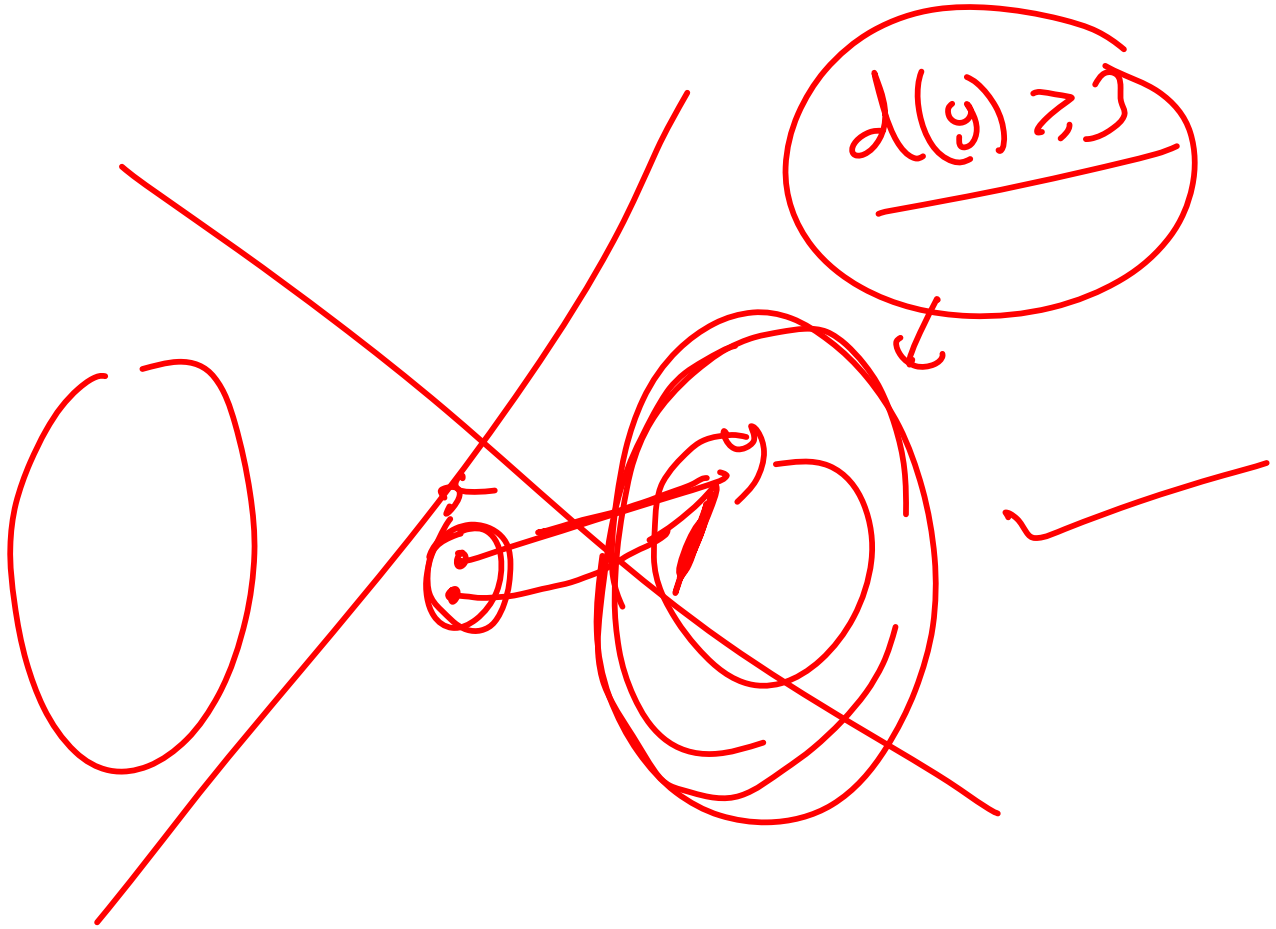

x, y, z
minimum
x
y
z
C
w

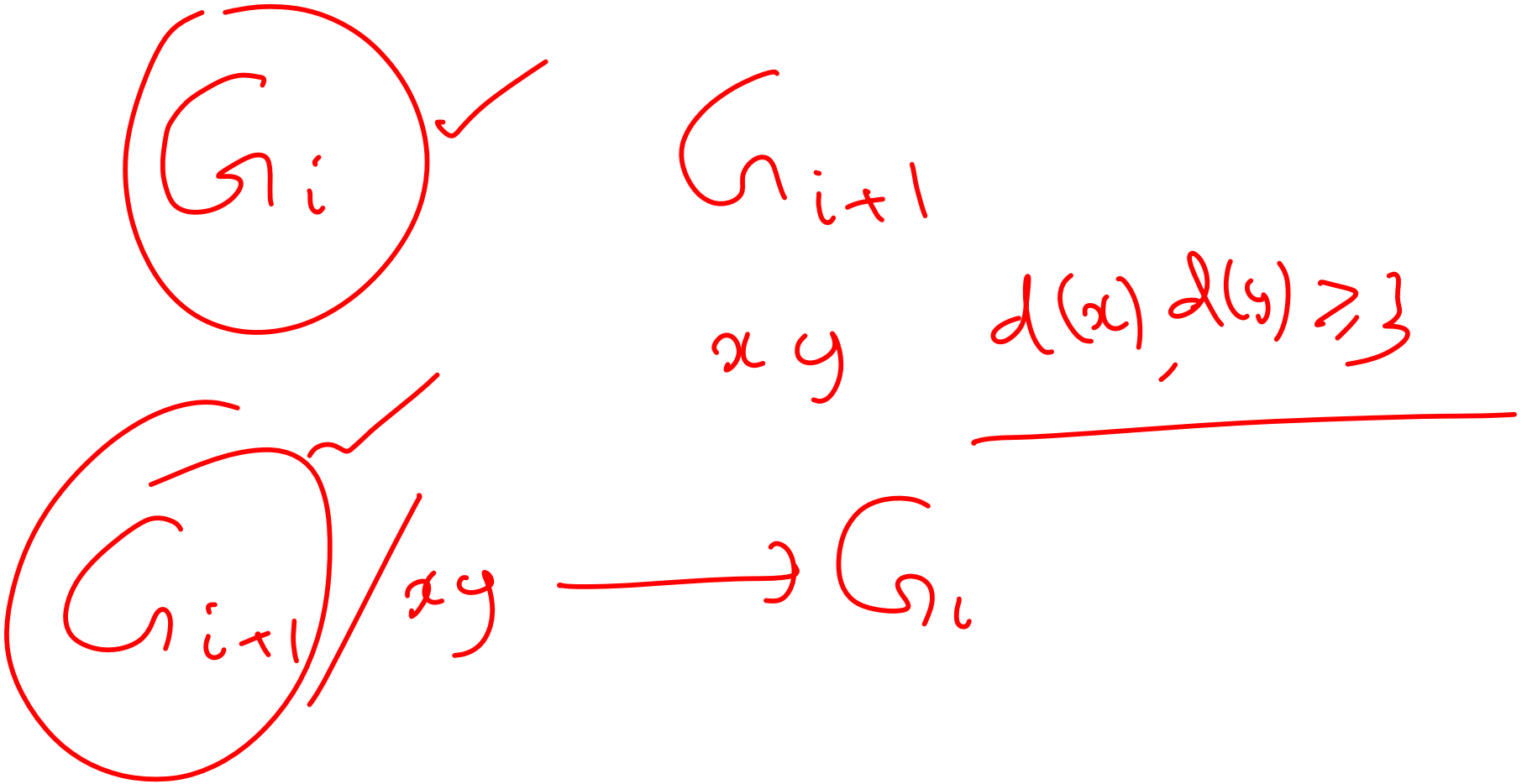

C

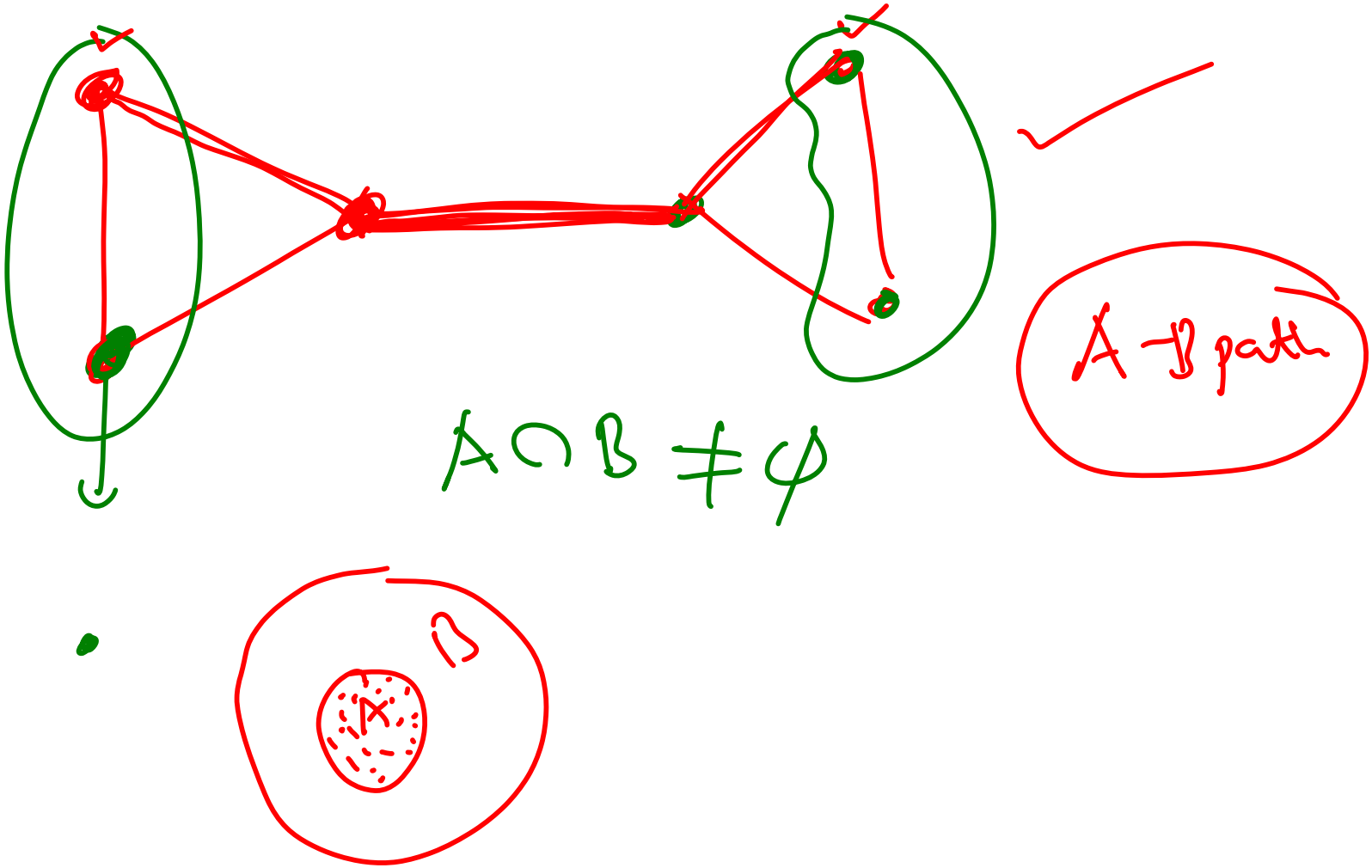


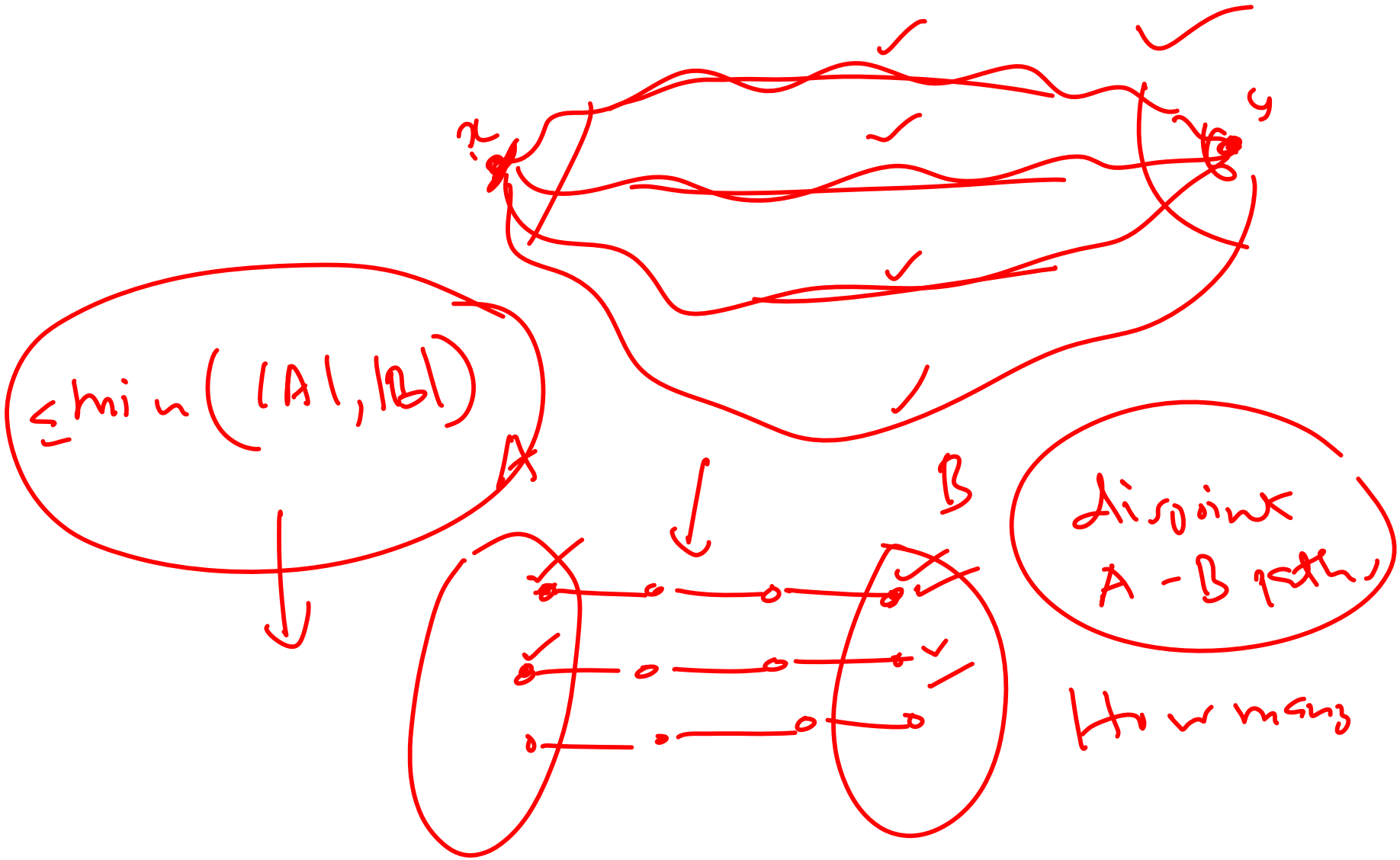

G_i — 3 connected
G_{i+1}
$(x-y)$ edge
G_{i+1}
$xy \to G_i$
$d(x), d(y) \geq 3$


G_{i+1}
x
y
y
x+y
v


d(y) ≥ 1

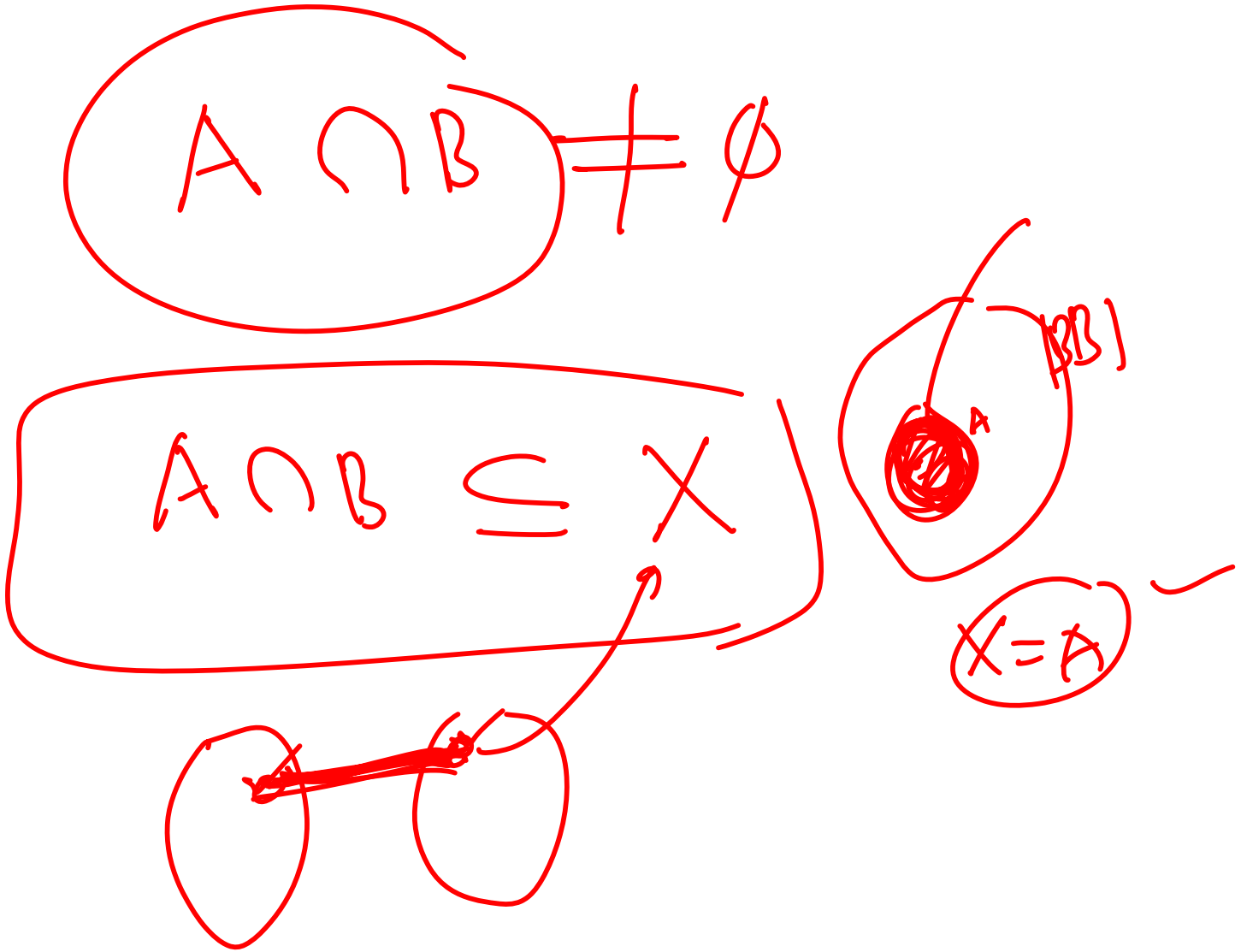

G_i
G_{i+1}
$x\ y$
$d(x), d(y) \geq 3$
G_{i+1}
xy
G_i

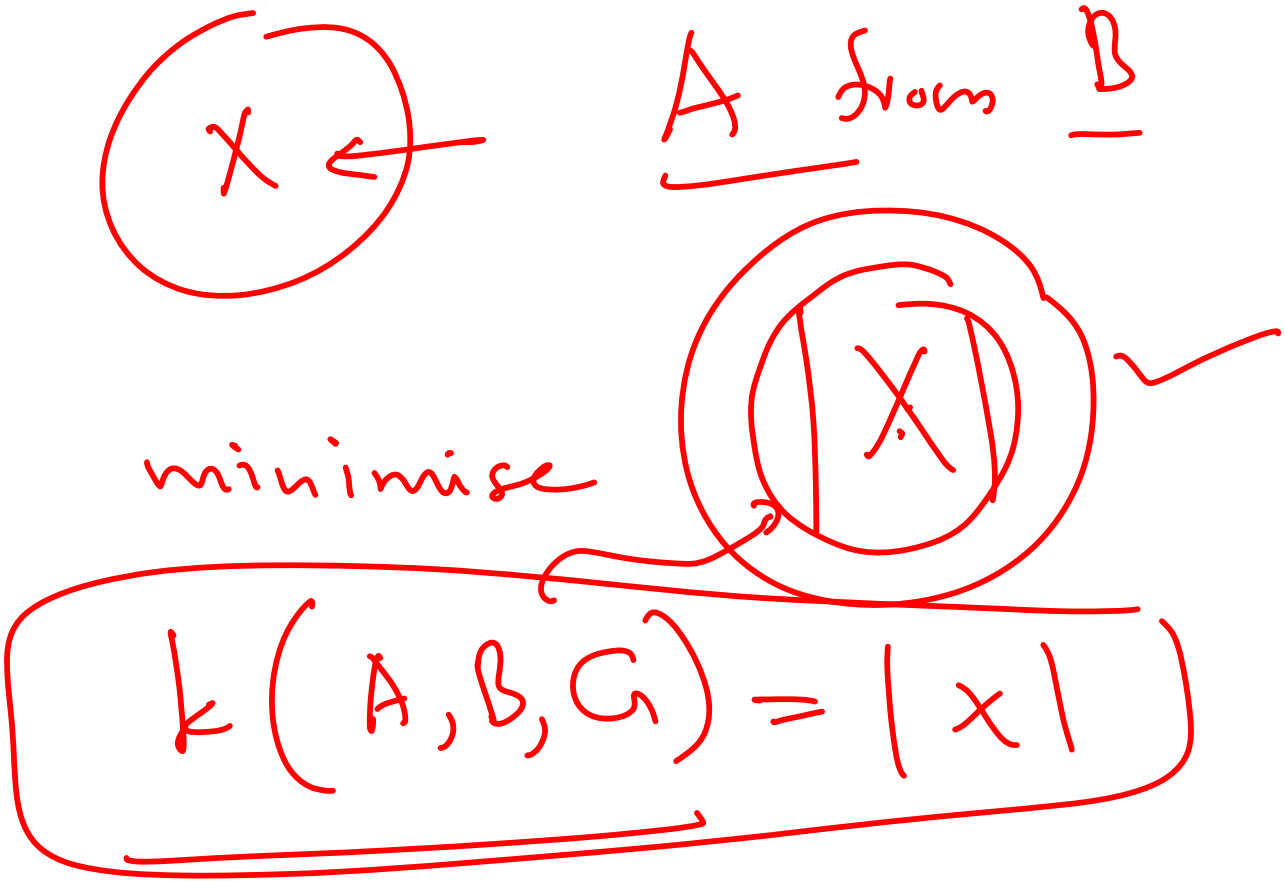

A ∩ B ≠ φ
A - B path
D
A

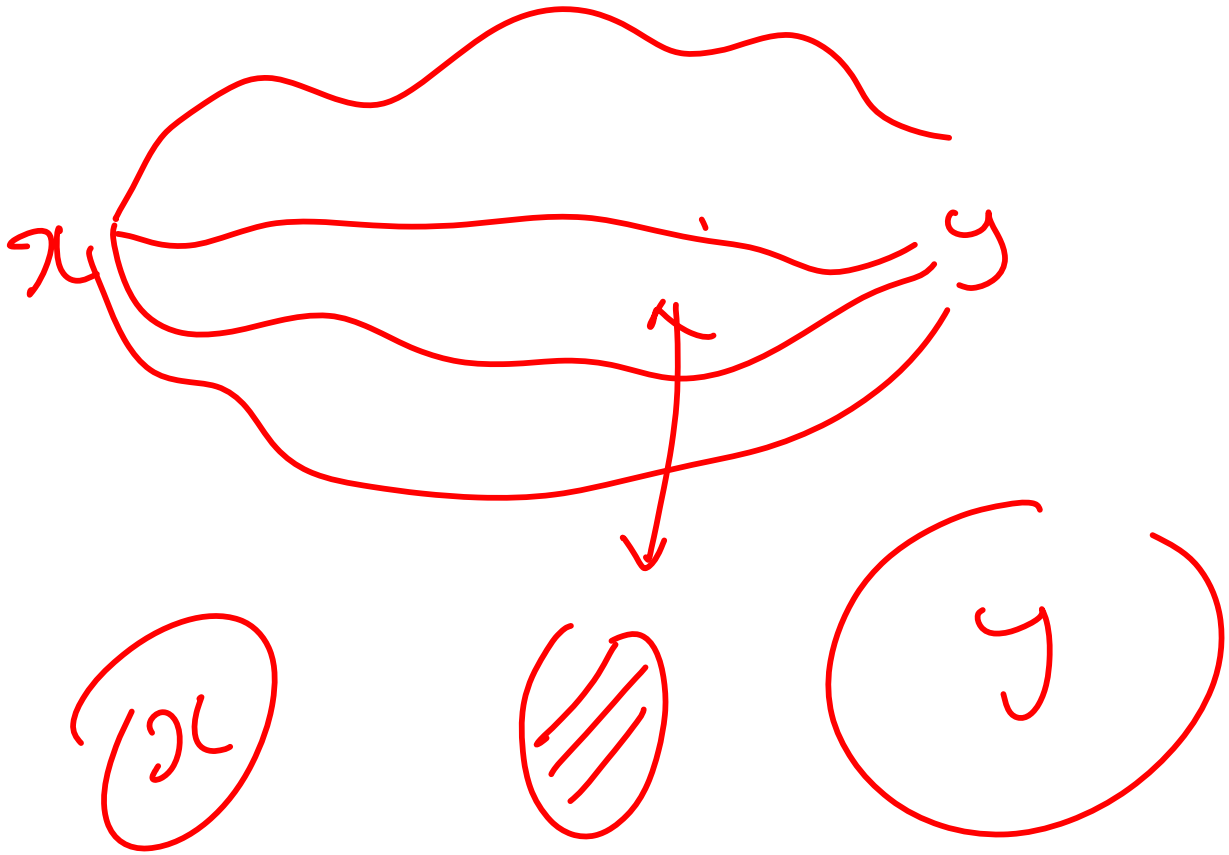

x
y
A
B
≤ min(|A|, |B|)
disjoint
A - B paths

max # A-B paths $\leq$ min ($|A|$, $|B|$)

$|A \cap B| \leq$ max # of A-B path


A ∩ B ≠ ∅
A ∩ B ⊆ X
A
B
X = A

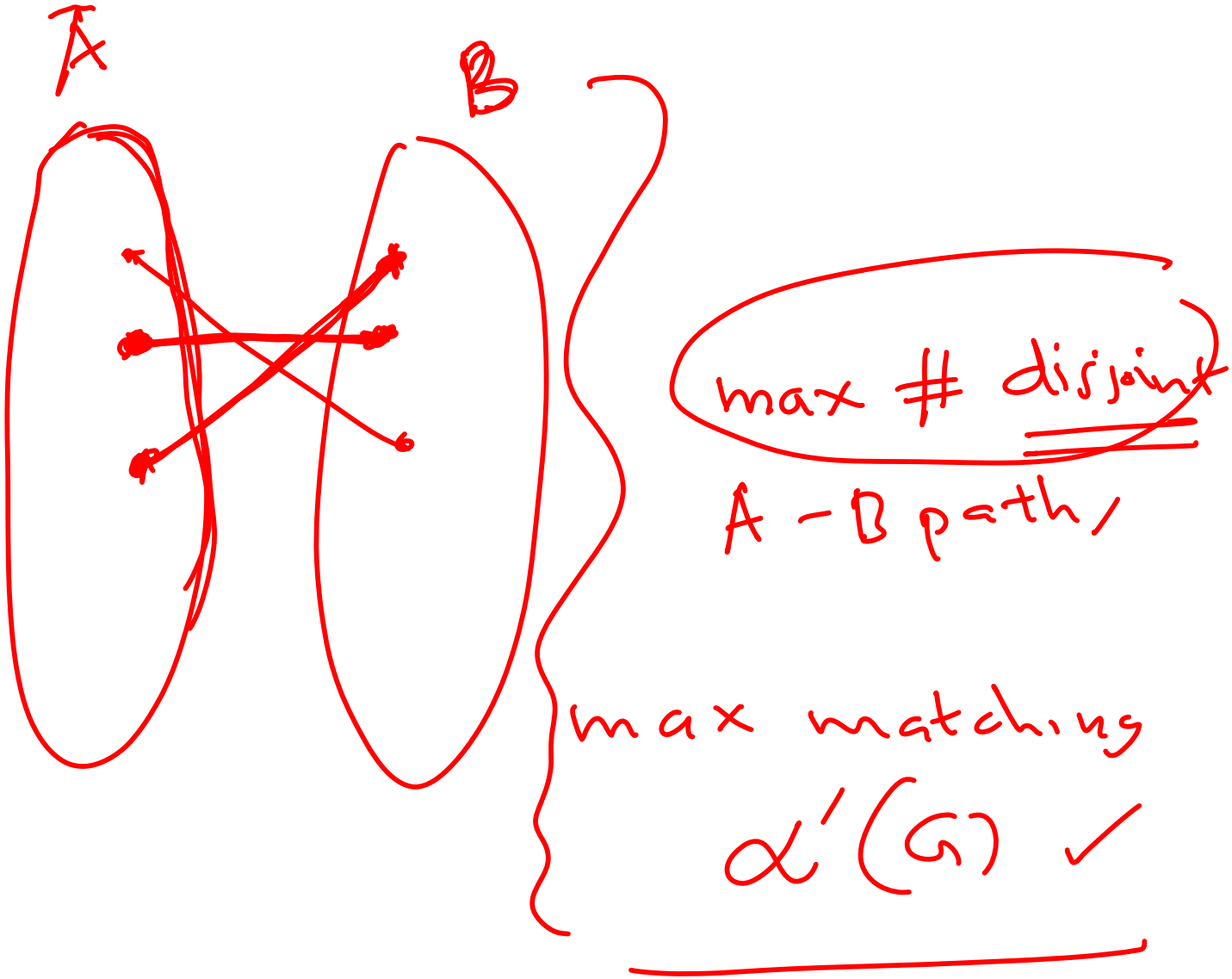

X
A from B
X
minimise
k(A,B,G) = |x|

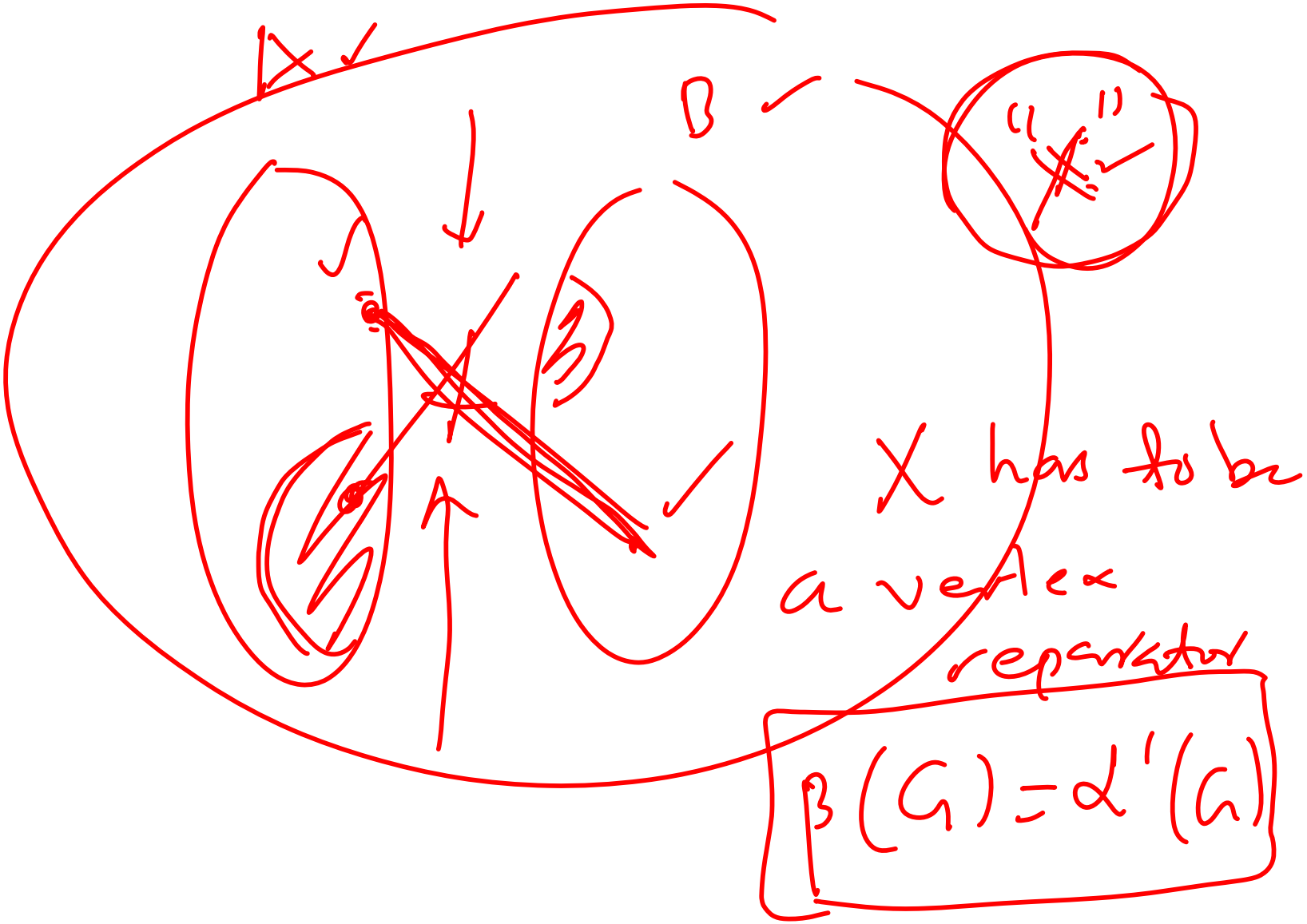

x
y
x
y

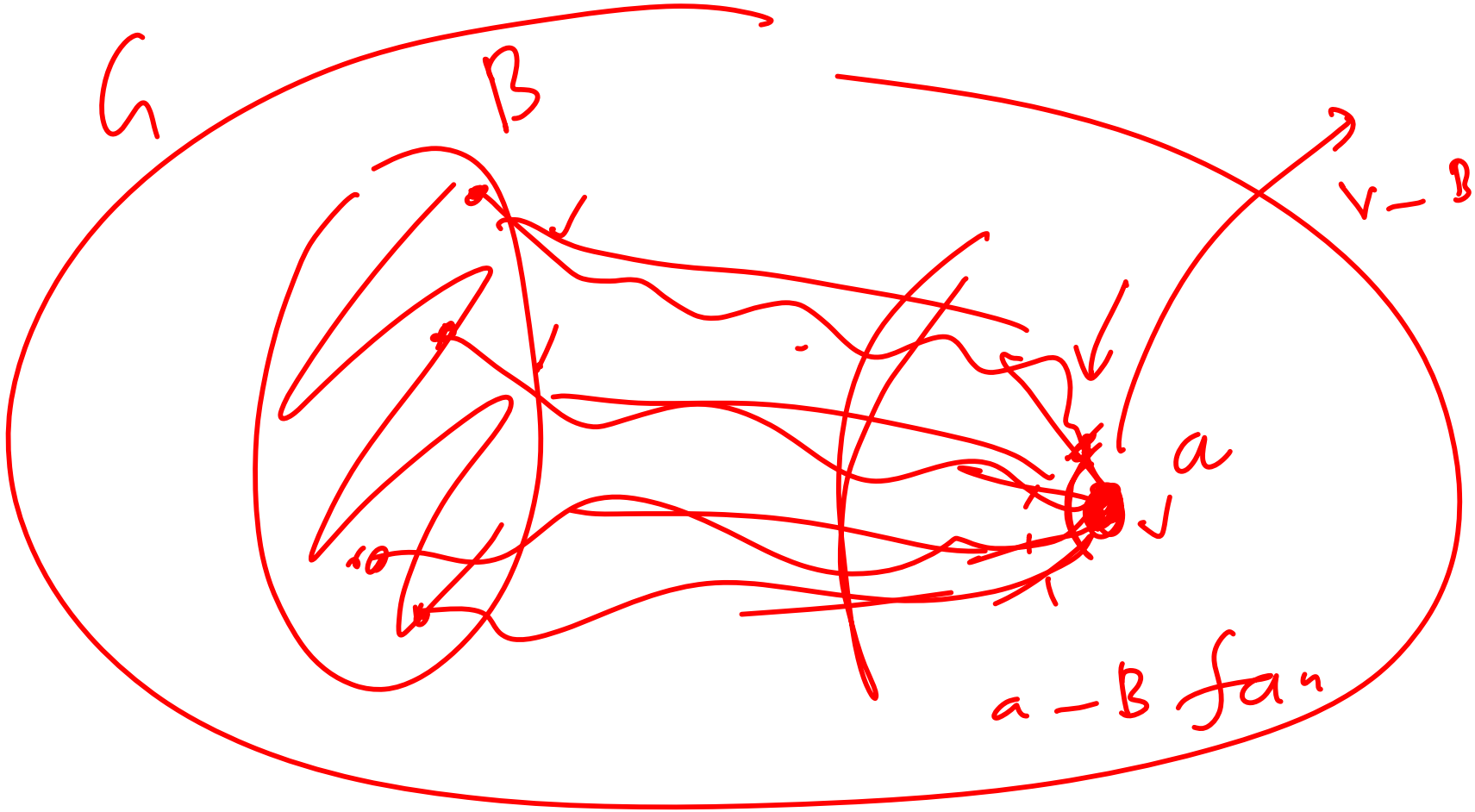
A B

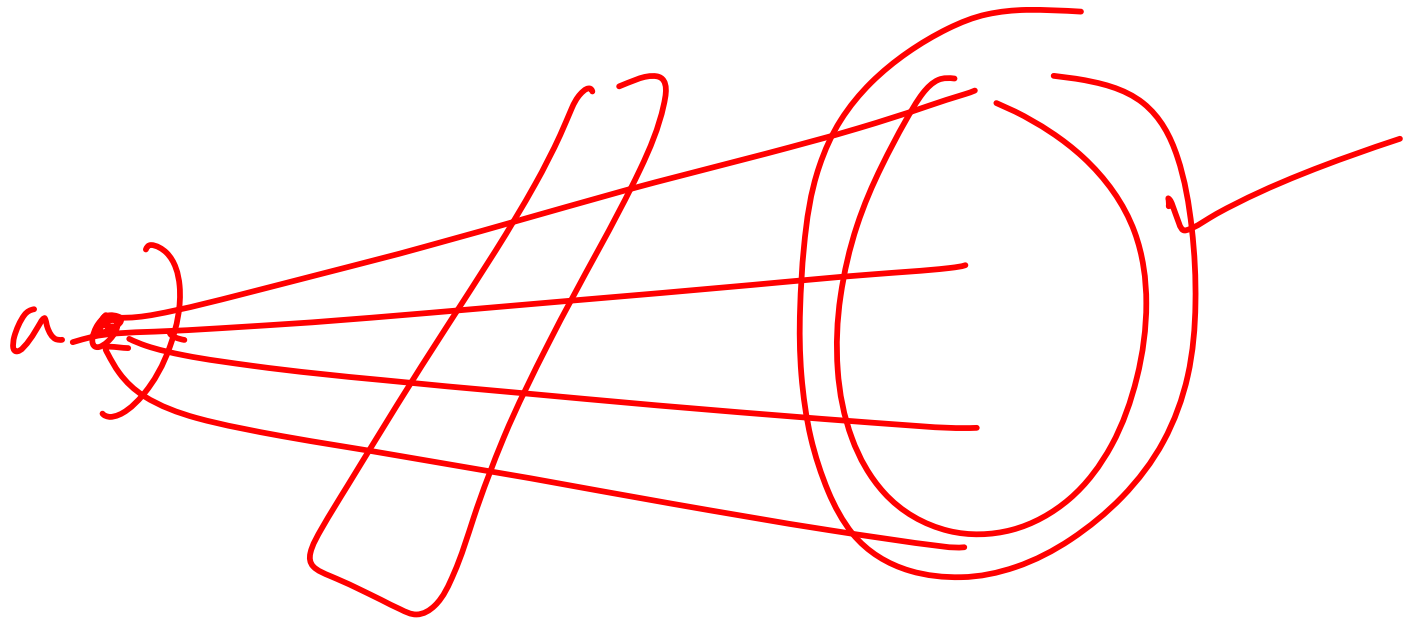
max # disjoint A-B paths

= min $|X|$ that separates A from B

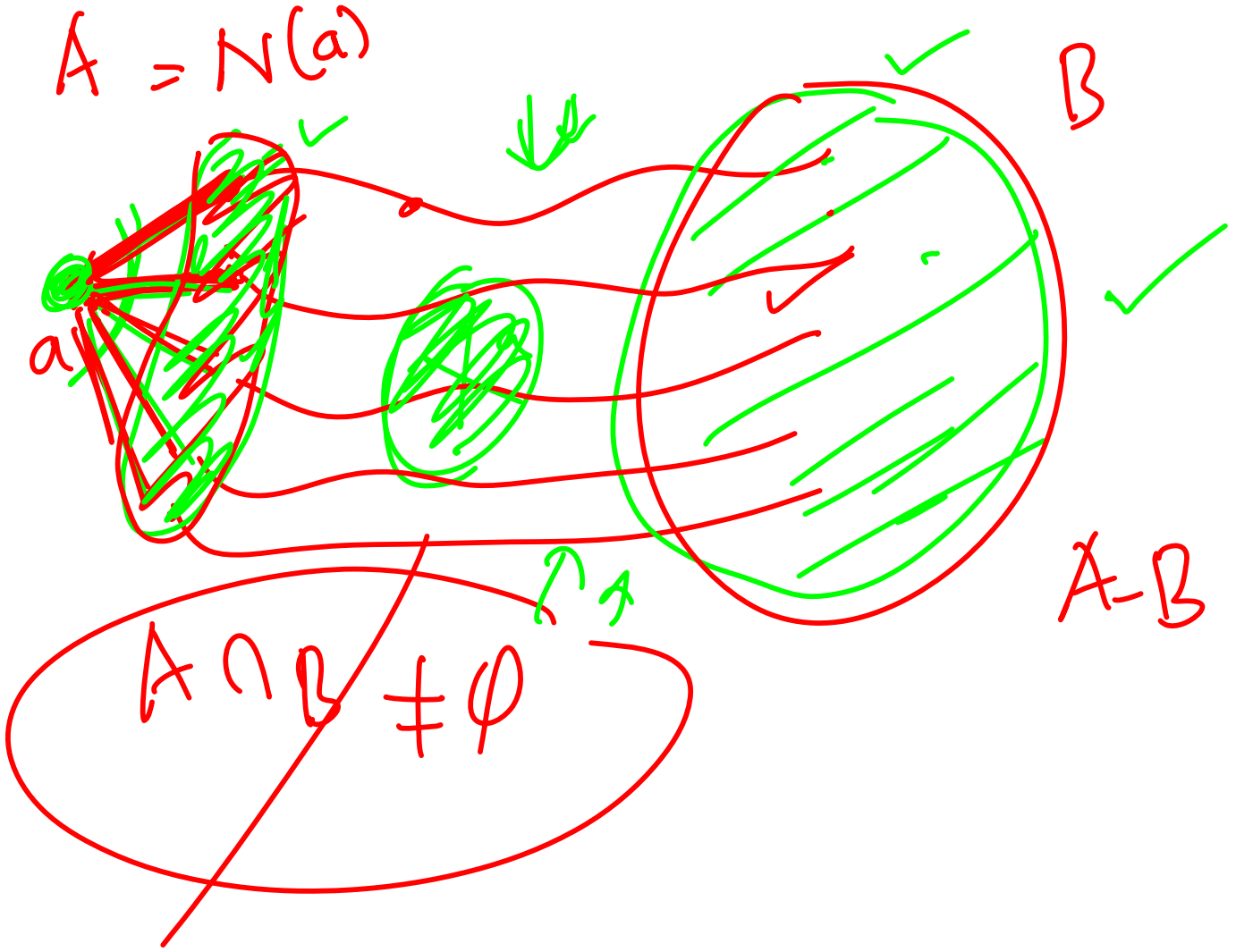

A
B
max # disjoint
A - B paths
max matching
$\alpha'(G)$ ✓

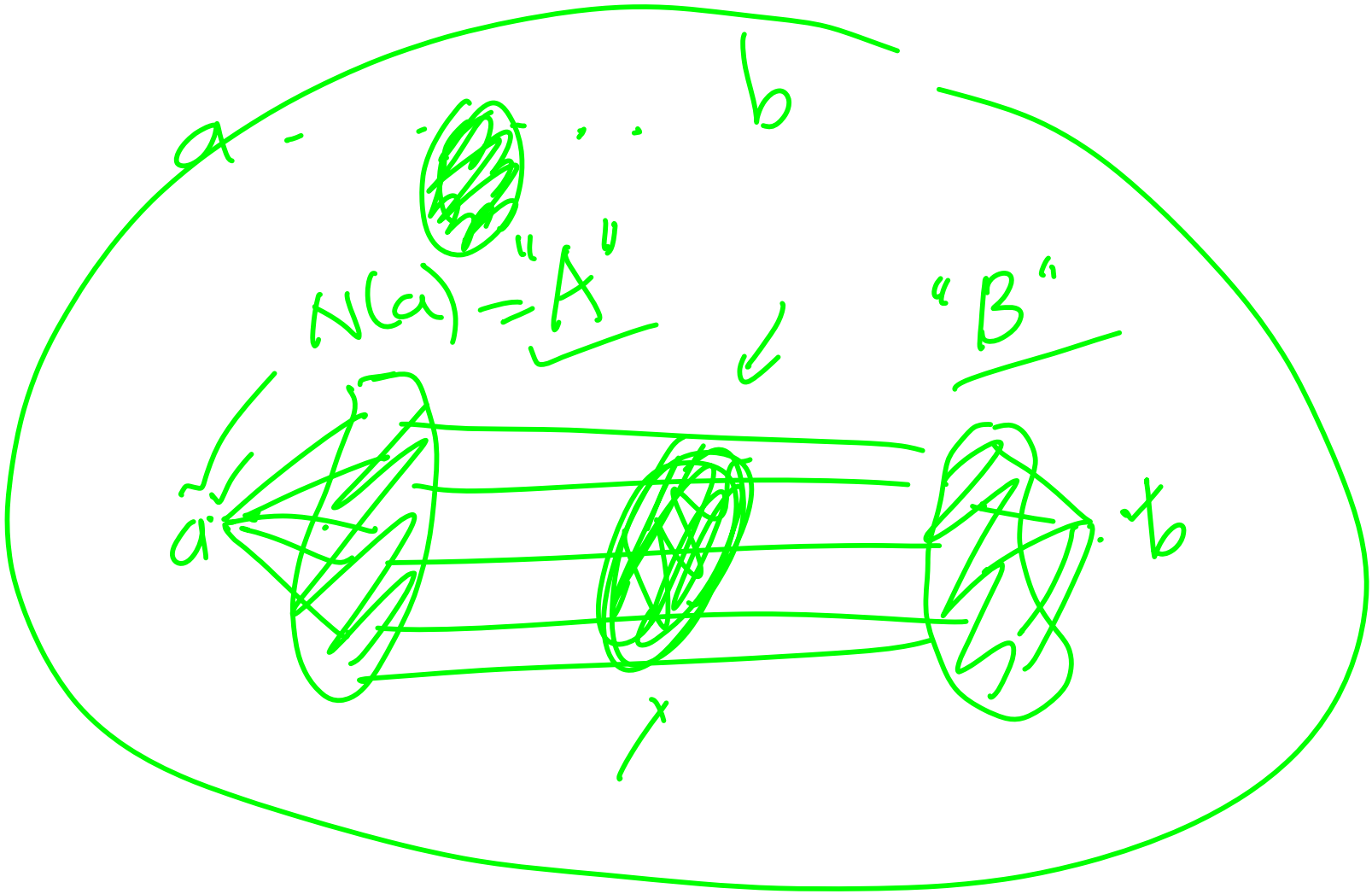

A
B
X has to be
a vertex
separator
$\beta(G) = \alpha'(G)$

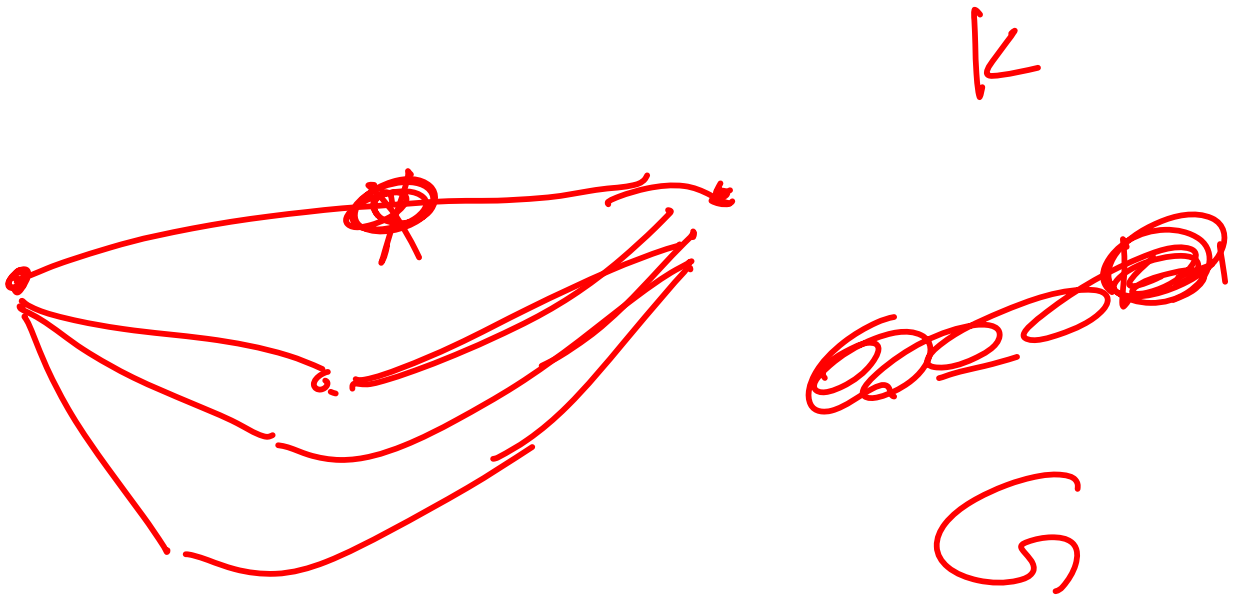

G
B
V − B
a
a − B fan

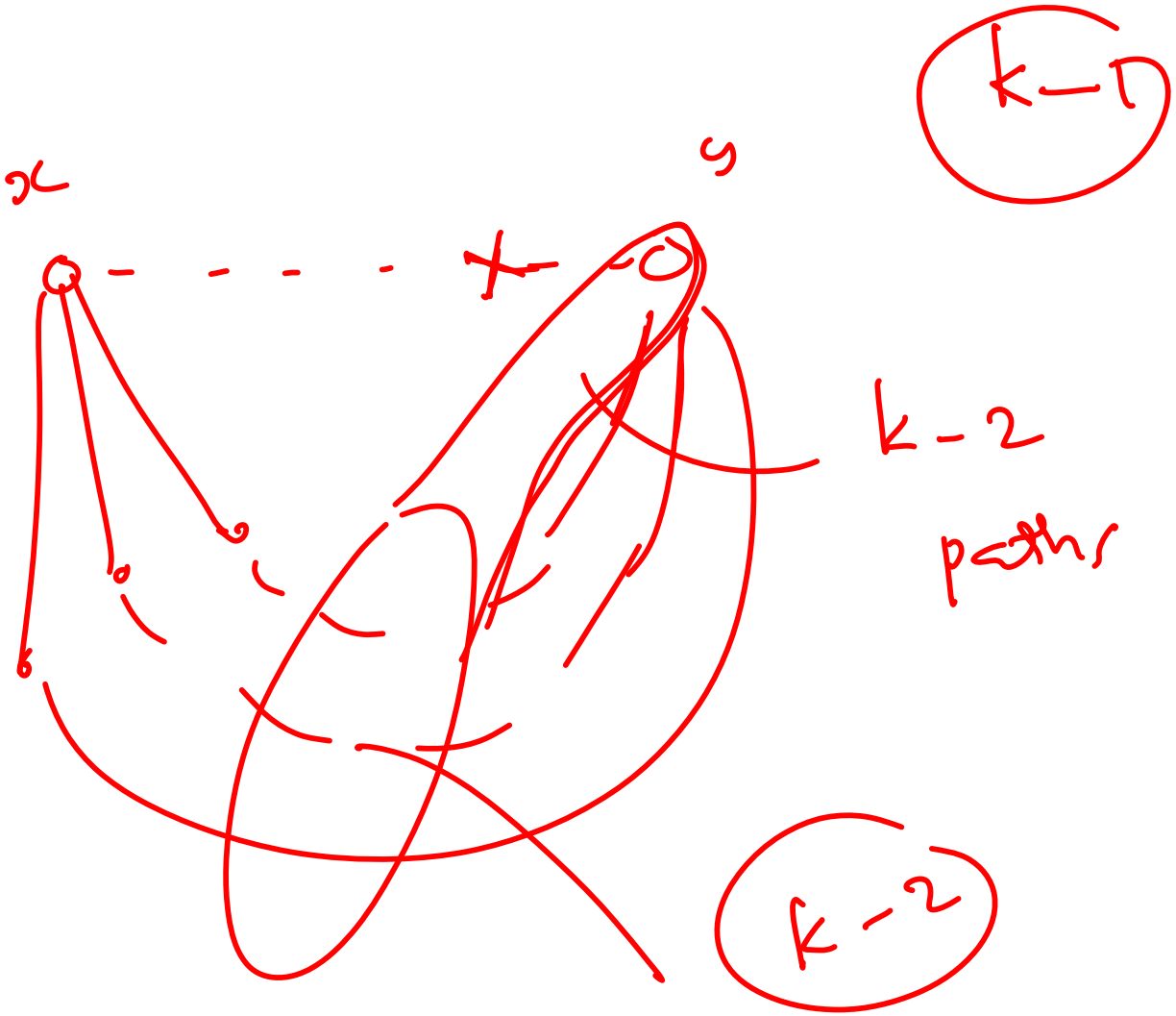


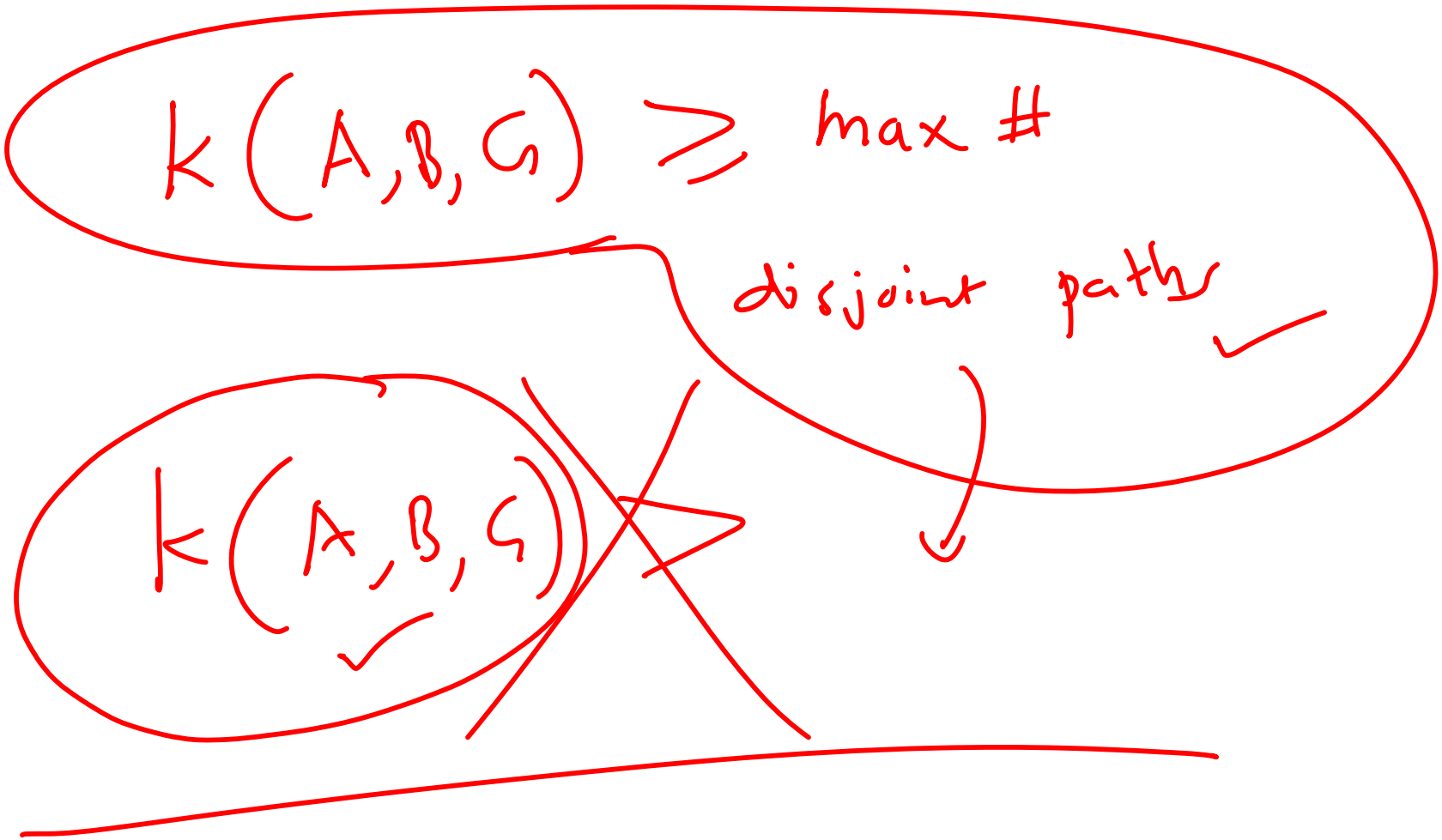
min # vertices outside a


A = N(a)
B
a
A-B
A ∩ B ≠ φ


a
b
"A"
N(a) = A
"B"
a
b
γ




k-1
x
y
k-2
paths
k-2


k(A, B, G) ≥ max #
disjoint paths
k(A, B, G)