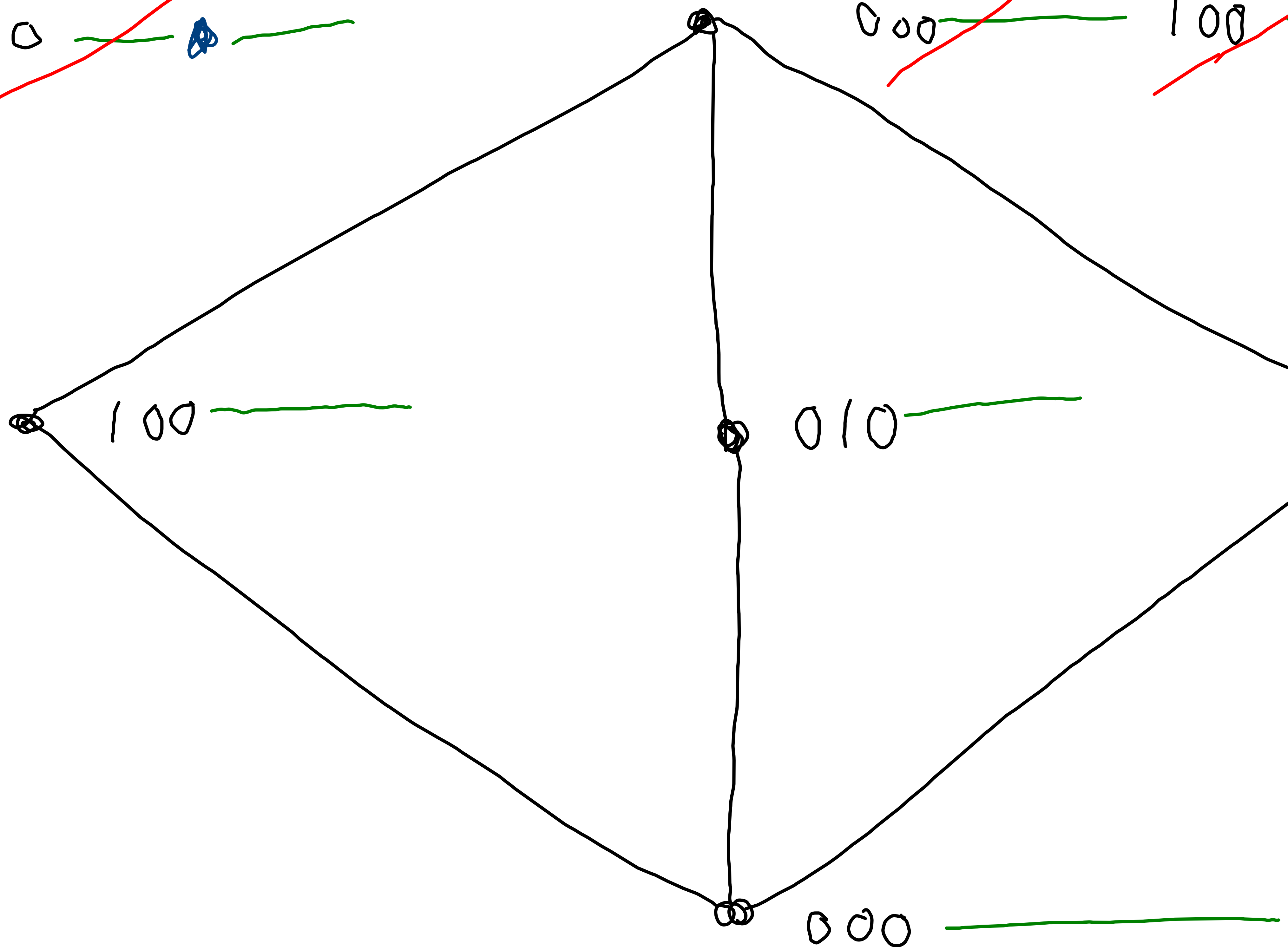
~~000~~ ~~∅~~

~~000~~ ~~100~~ ~~010~~

~~001~~



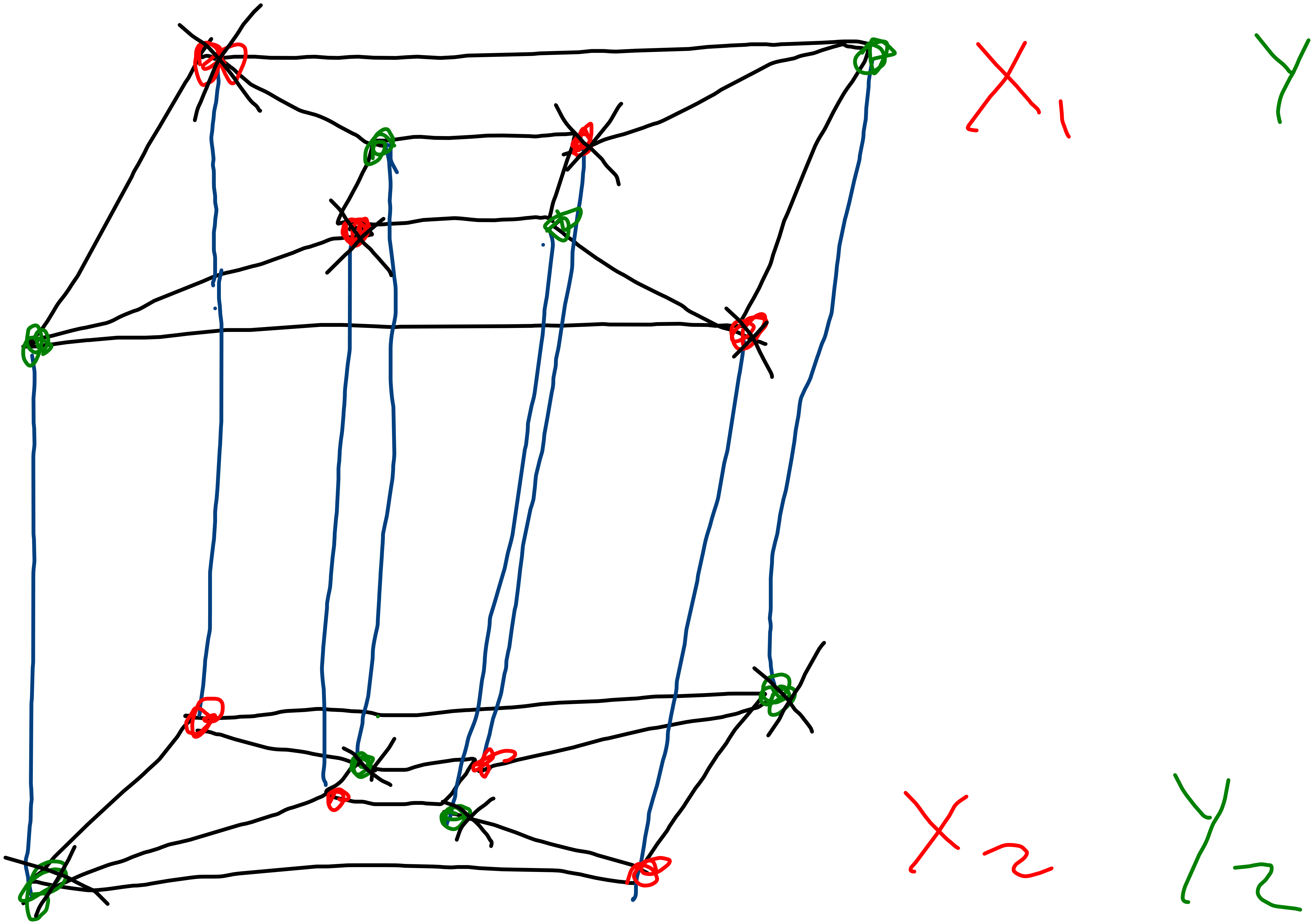
upper k-cube C_1 with bipartition X_1, Y_1

lower k-cube C_2 with bipartition X_2, Y_2

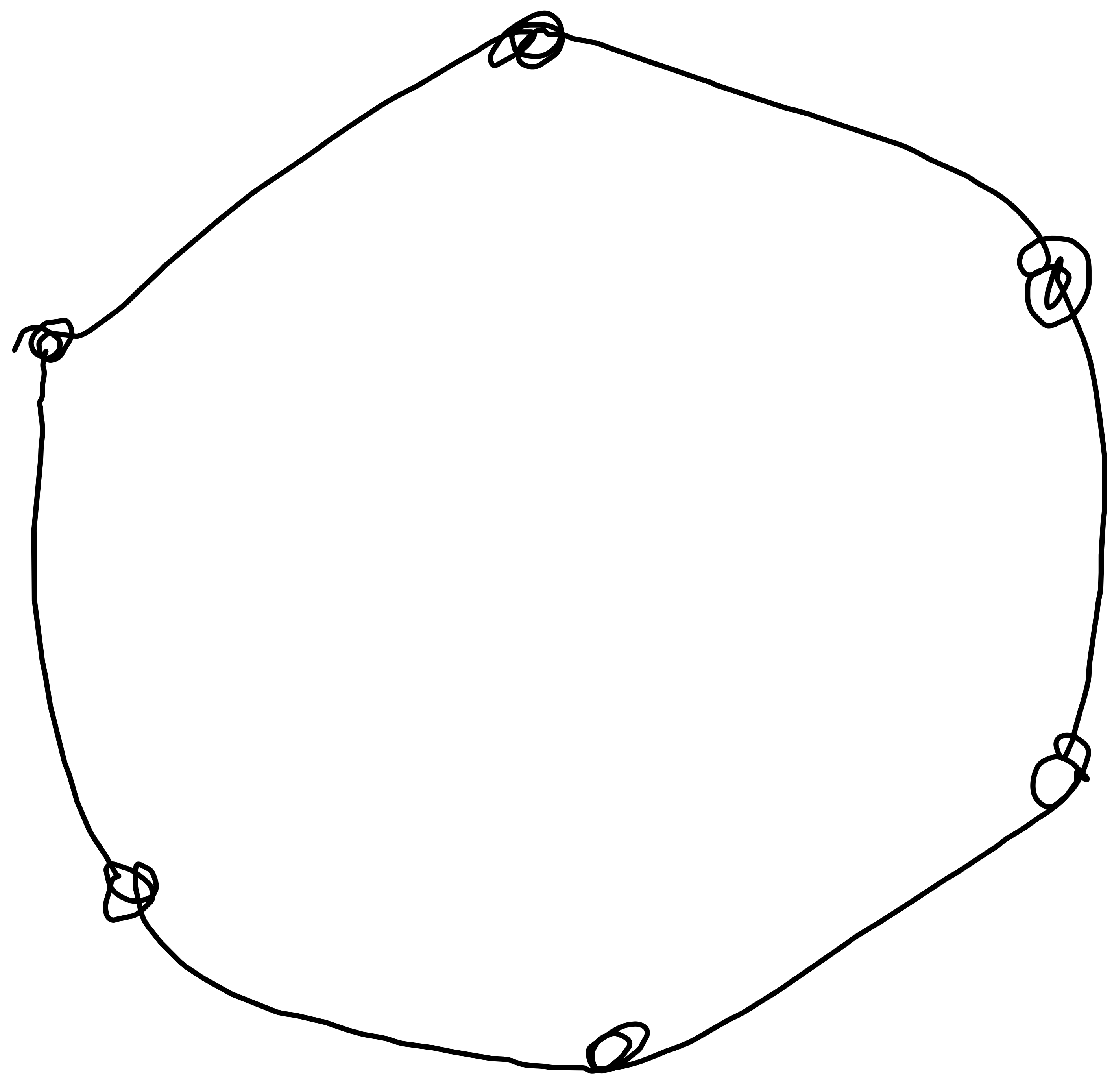
$(k+1)$-cube $C = C_1 \cup C_2 \cup \{$edges joining each upper vertex with the corresponding lower one$\}$

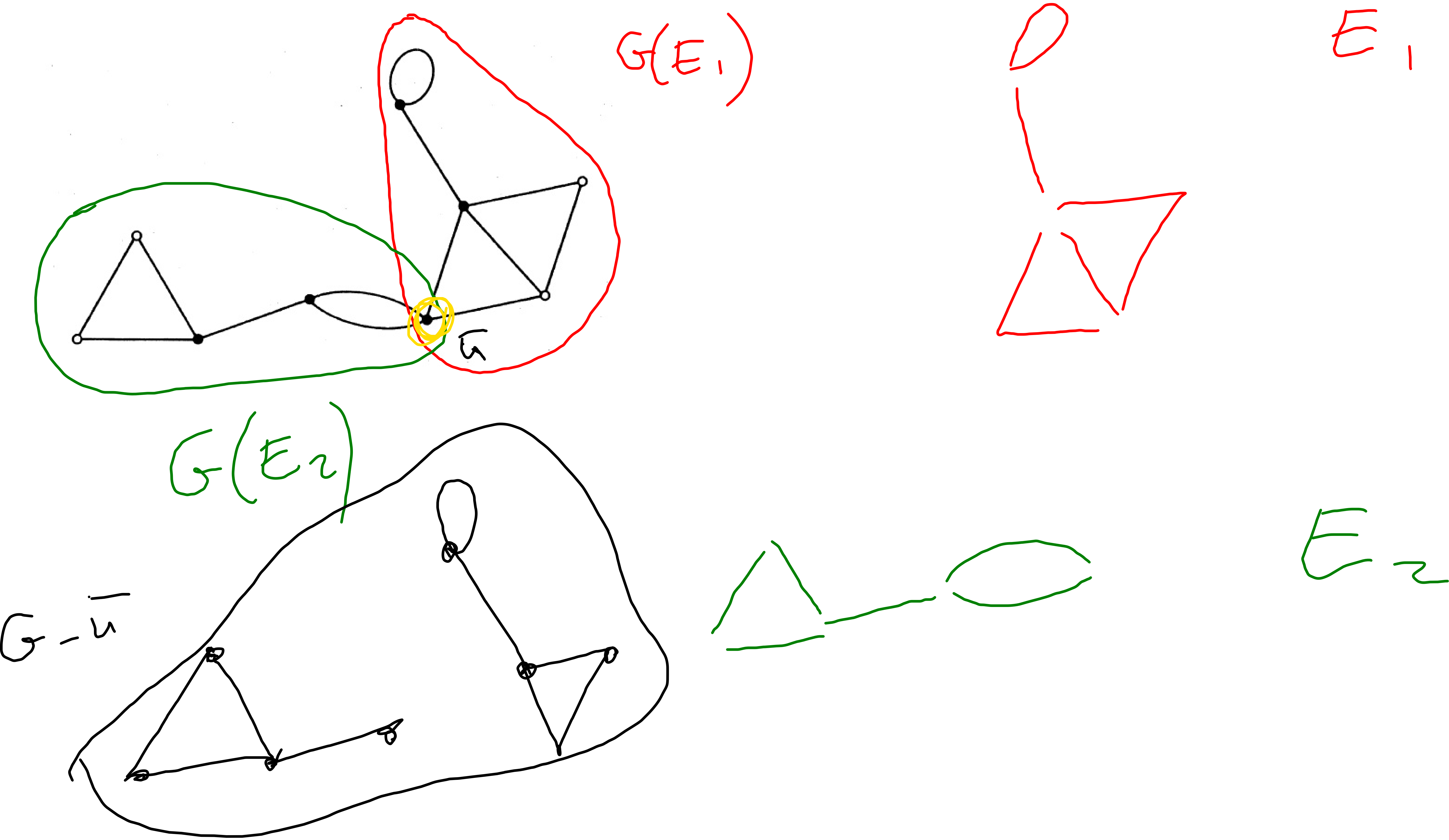
in C:

$$X = X_1 \cup Y_2, \quad Y = X_2 \cup Y_1$$

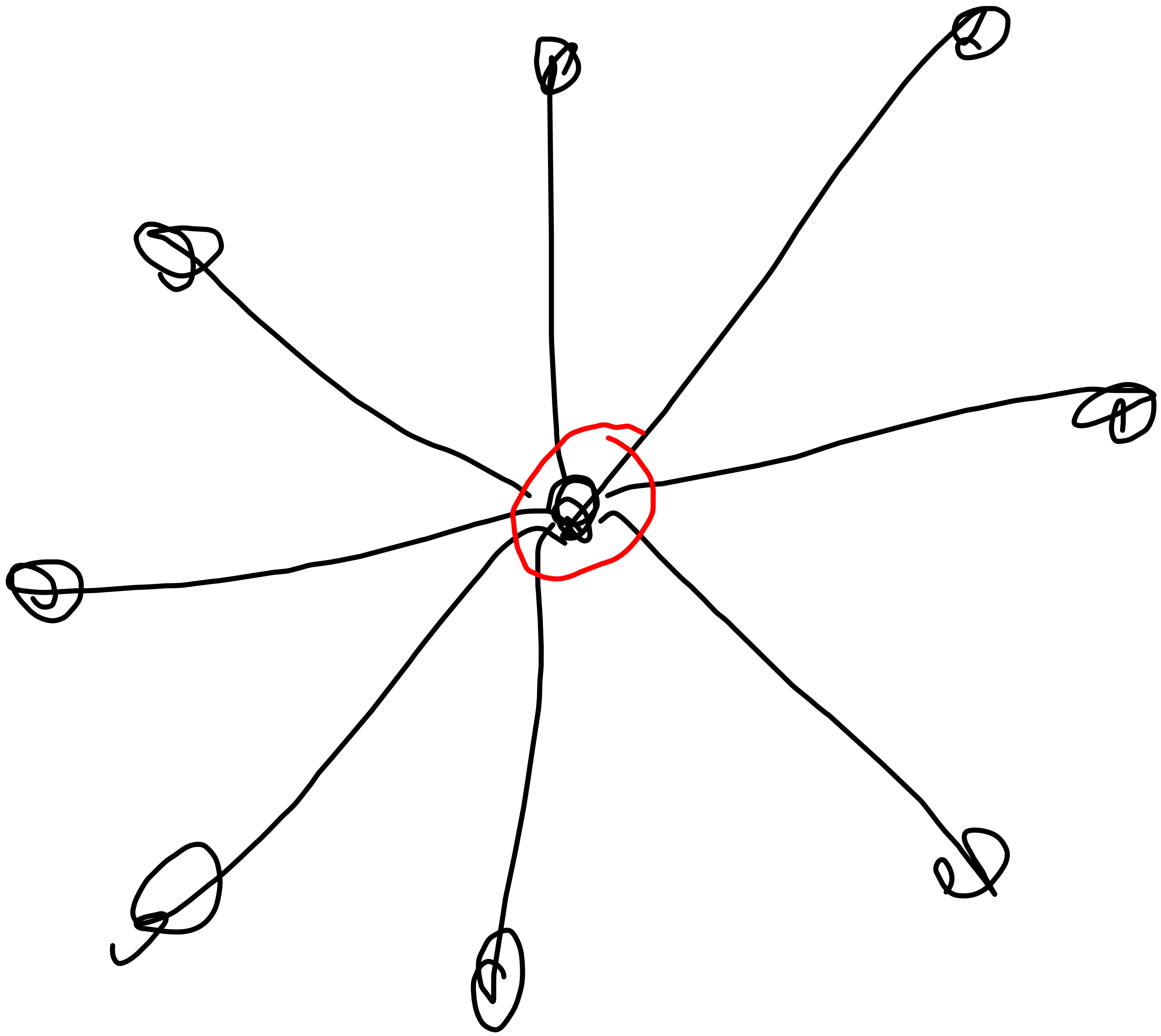


X_1
Y_1
X_2
Y_2

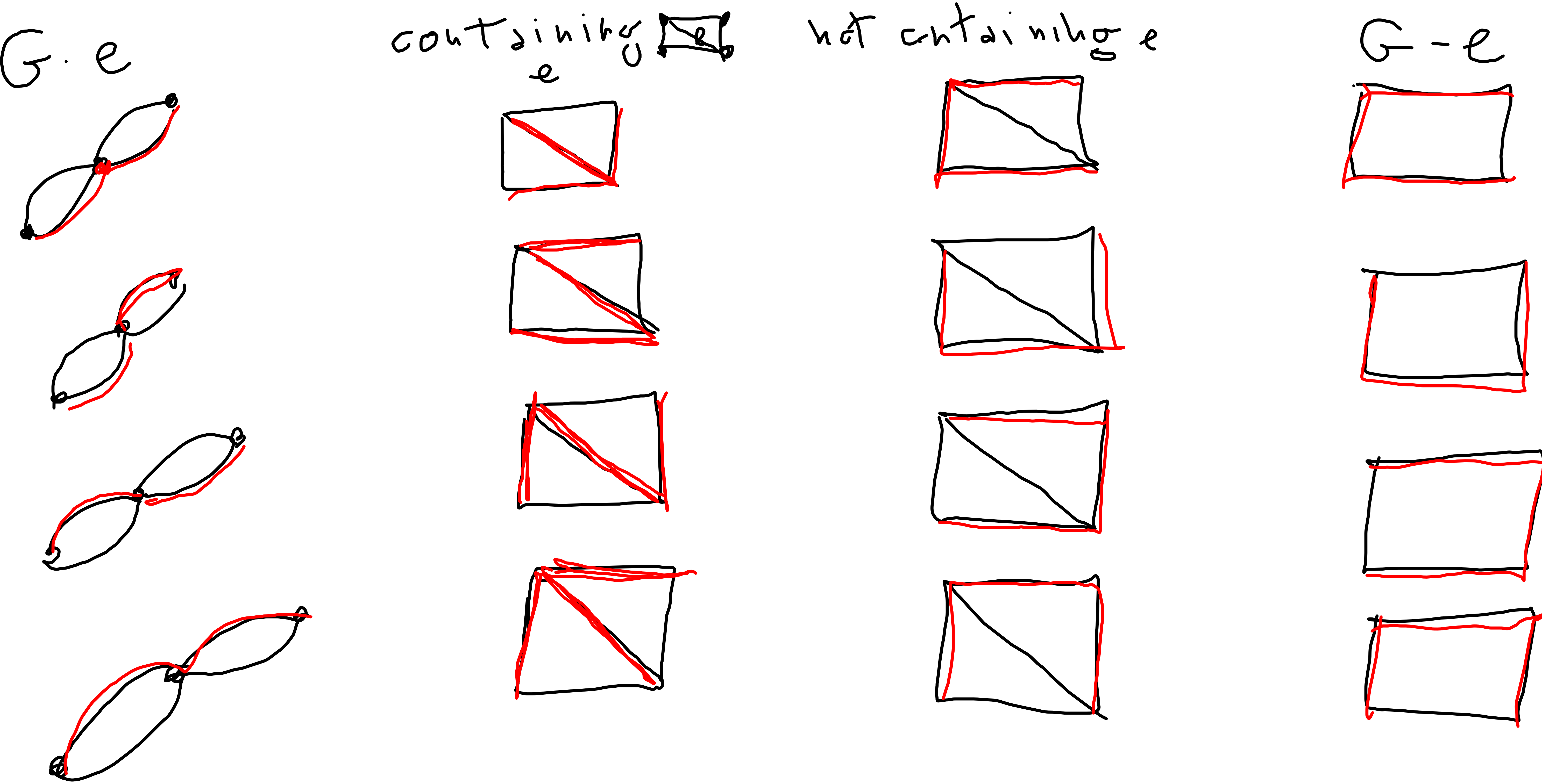


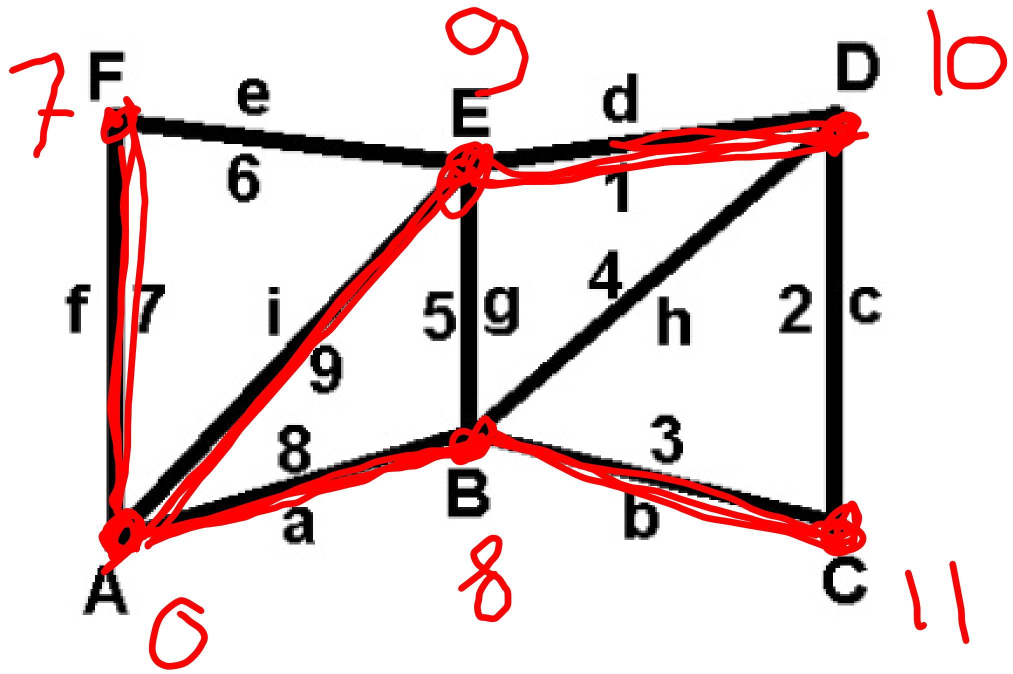


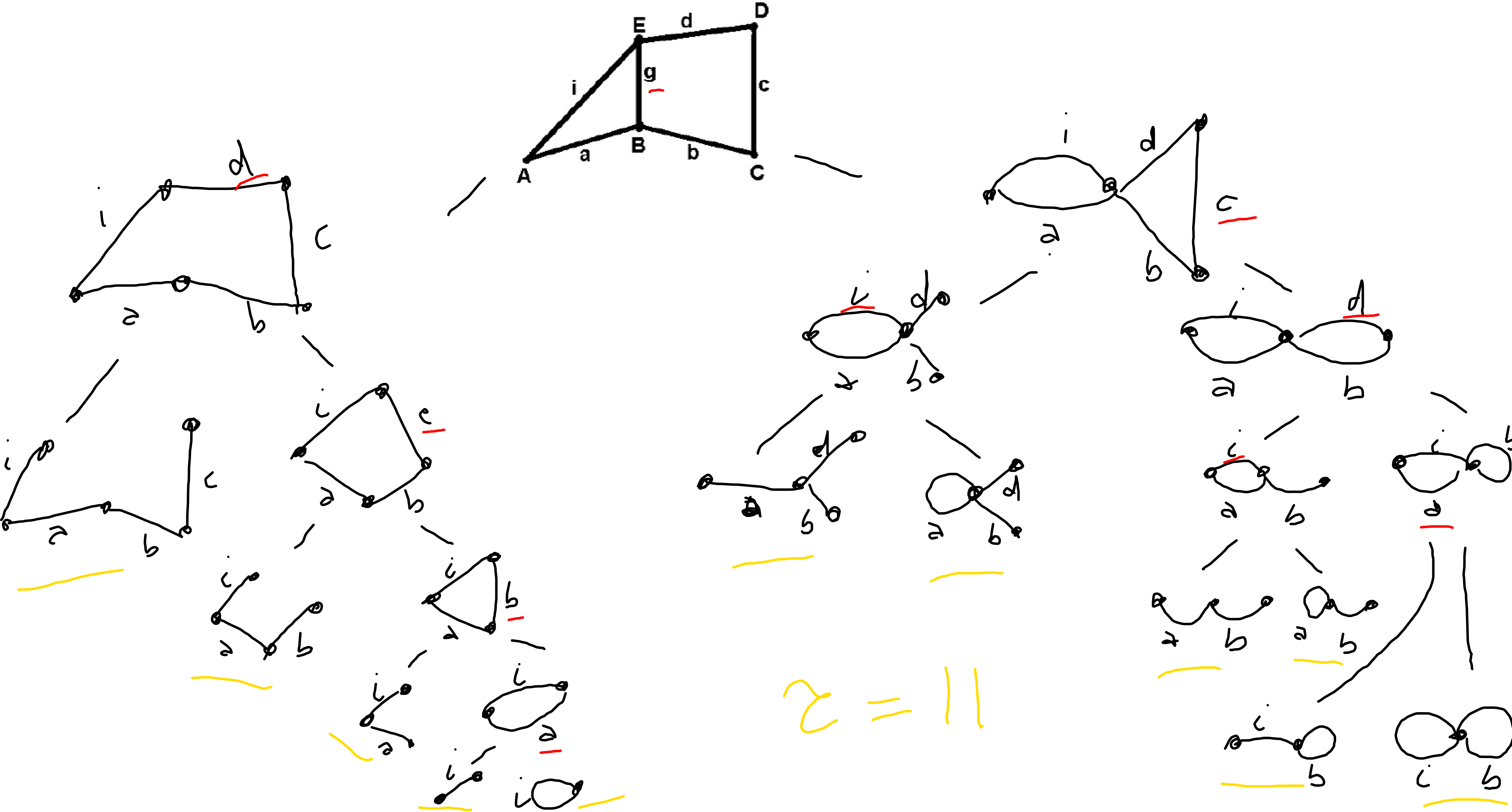
G(E1)
E1
ū
G(E2)
E2
G - ū



G · e | containing e | not containing e | G − e




F
E
D
A
B
C
e
6
d
1
f
7
i
9
5
g
4
h
2
c
8
a
3
b
7
9
10
0
8
11


E d D
i g c
A a B b C
τ = 11

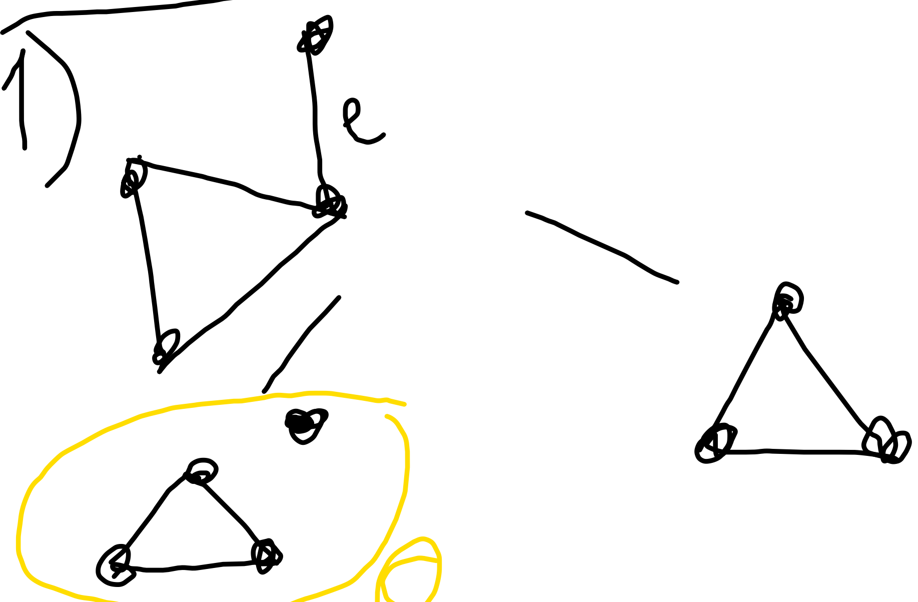
Shortcuts

1) $\tau(\text{disconnected}) = 0$

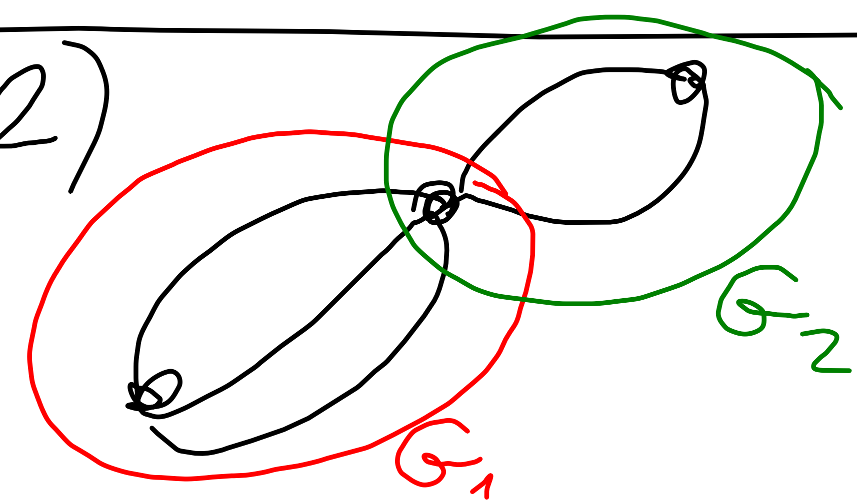
2) If $G = G_1 \cup G_2$, where $G_1 \cap G_2 = \{v\}$
a single vertex
then $\tau(G) = \tau(G_1) \cdot \tau(G_2)$

3) $\tau(\text{cycle}) = \text{number of edges}$

1)

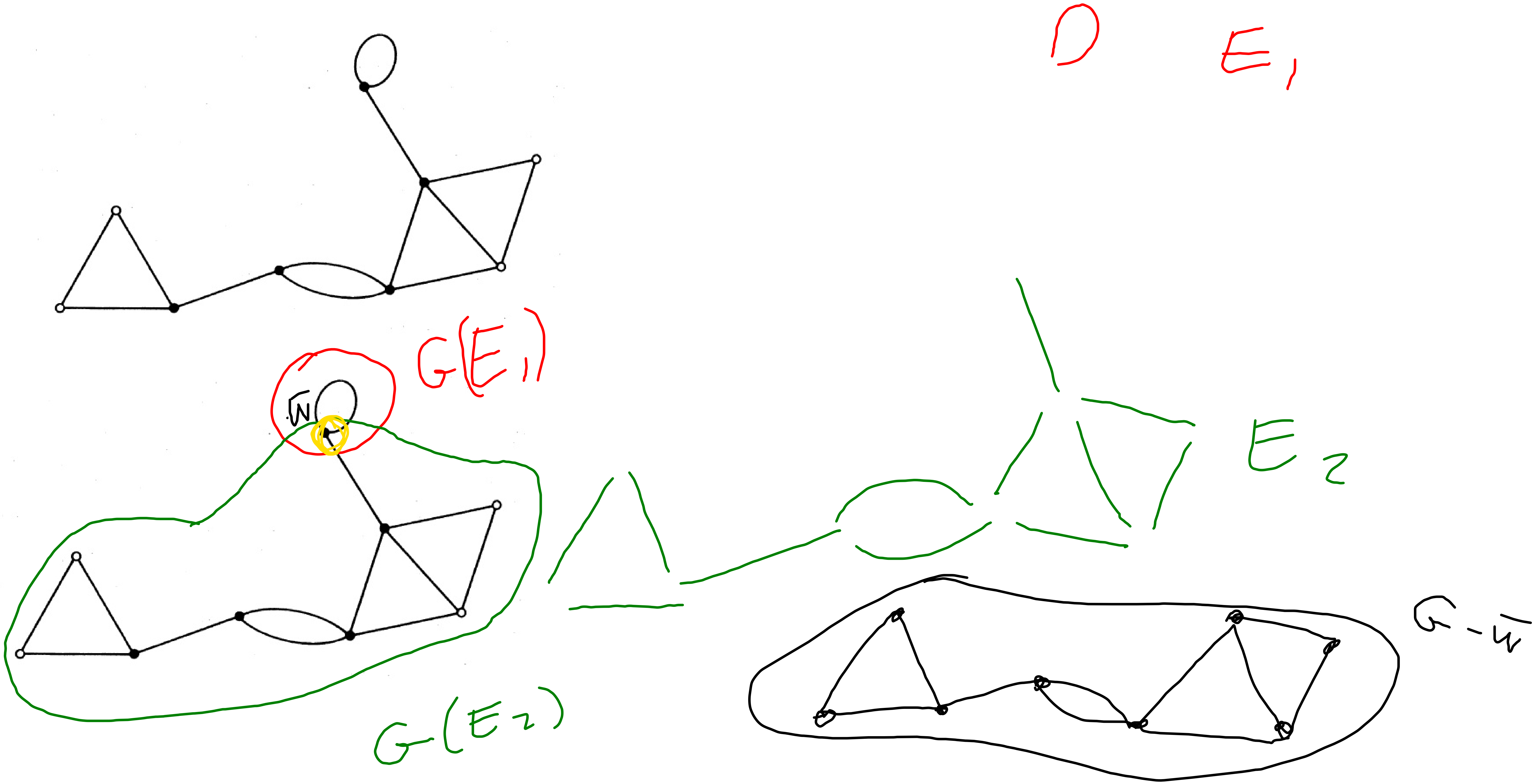


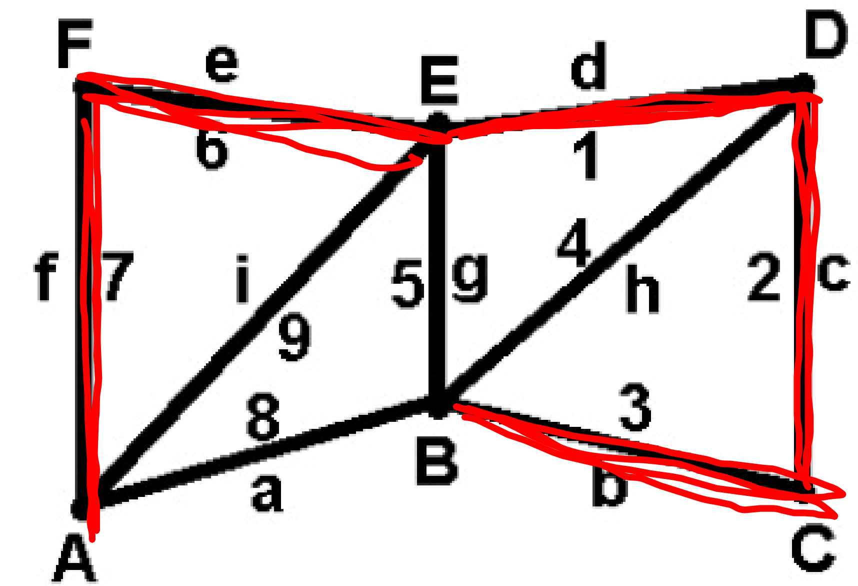
2)



$\tau(G_1) = 3$ $\quad \tau(G_2) = 2$

$\tau(G) = 3 \cdot 2 = 6$


D
E_1
$G(E_1)$
$\bar{w}$
E_2
$G(E_2)$
$G - \bar{w}$


F
e
E
d
D
6
1
f
7
i
5
g
4
h
2
c
9
8
3
B
a
b
A
C