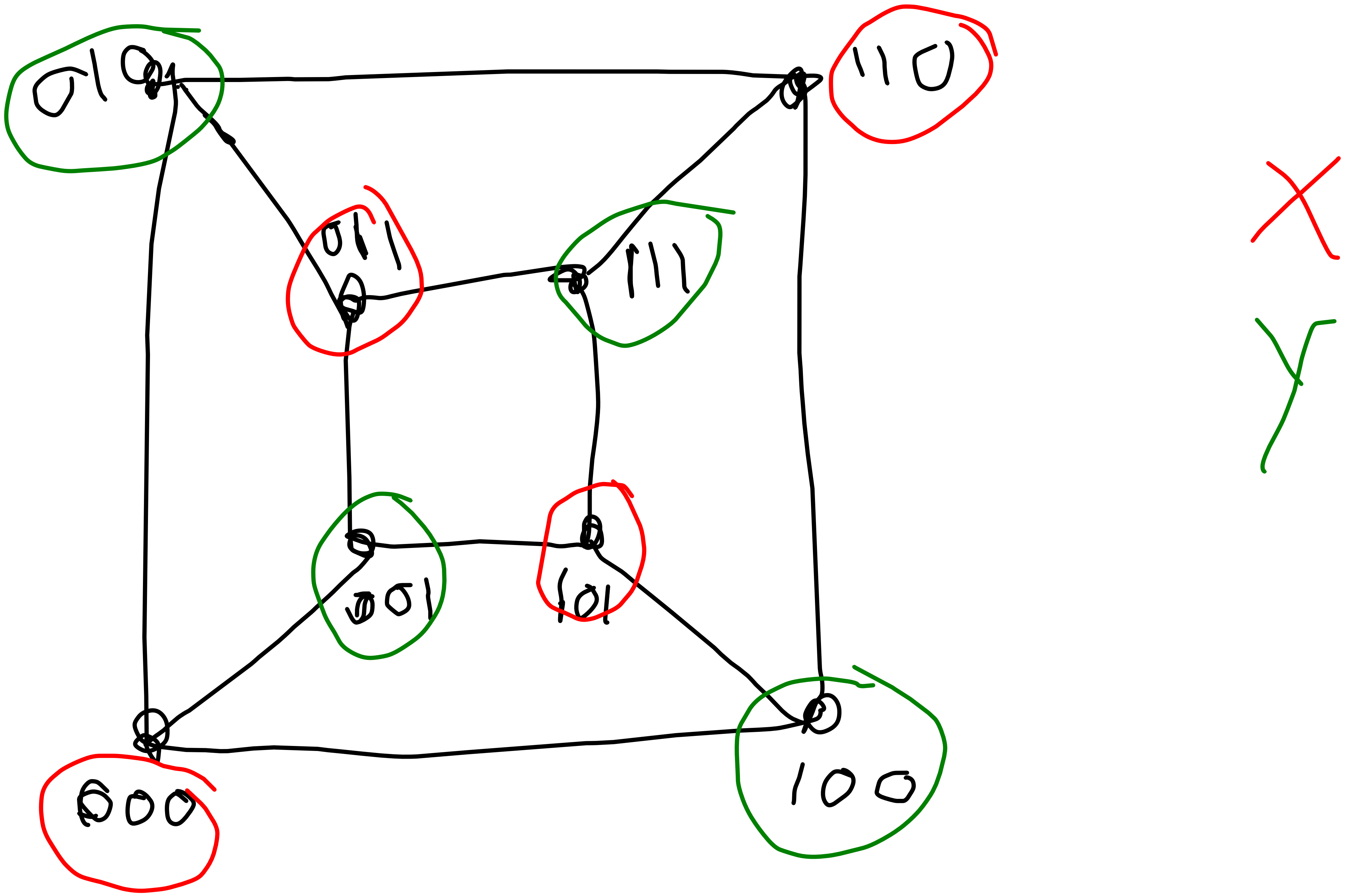
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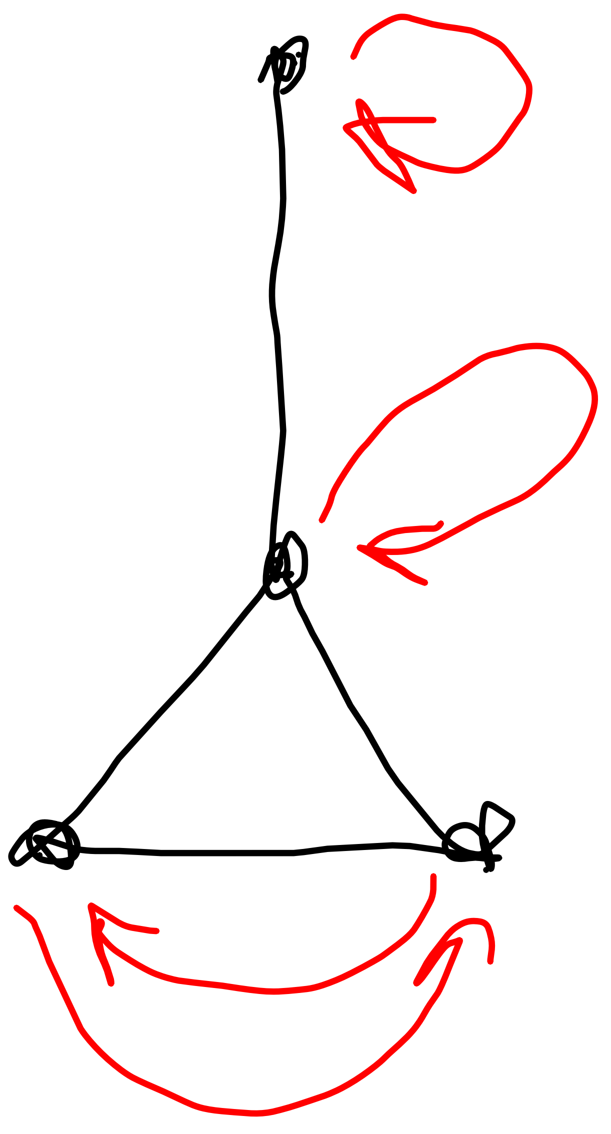
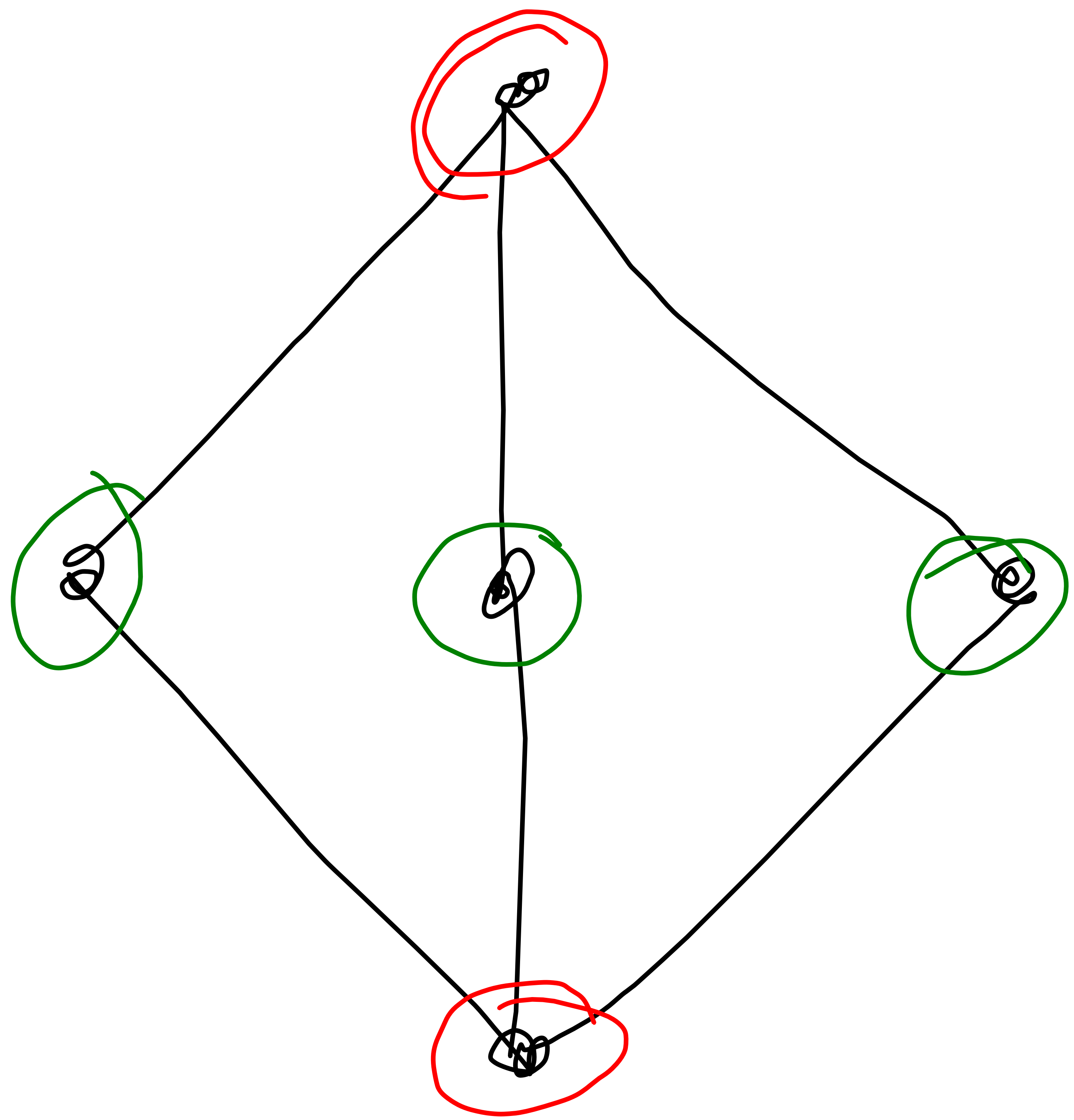
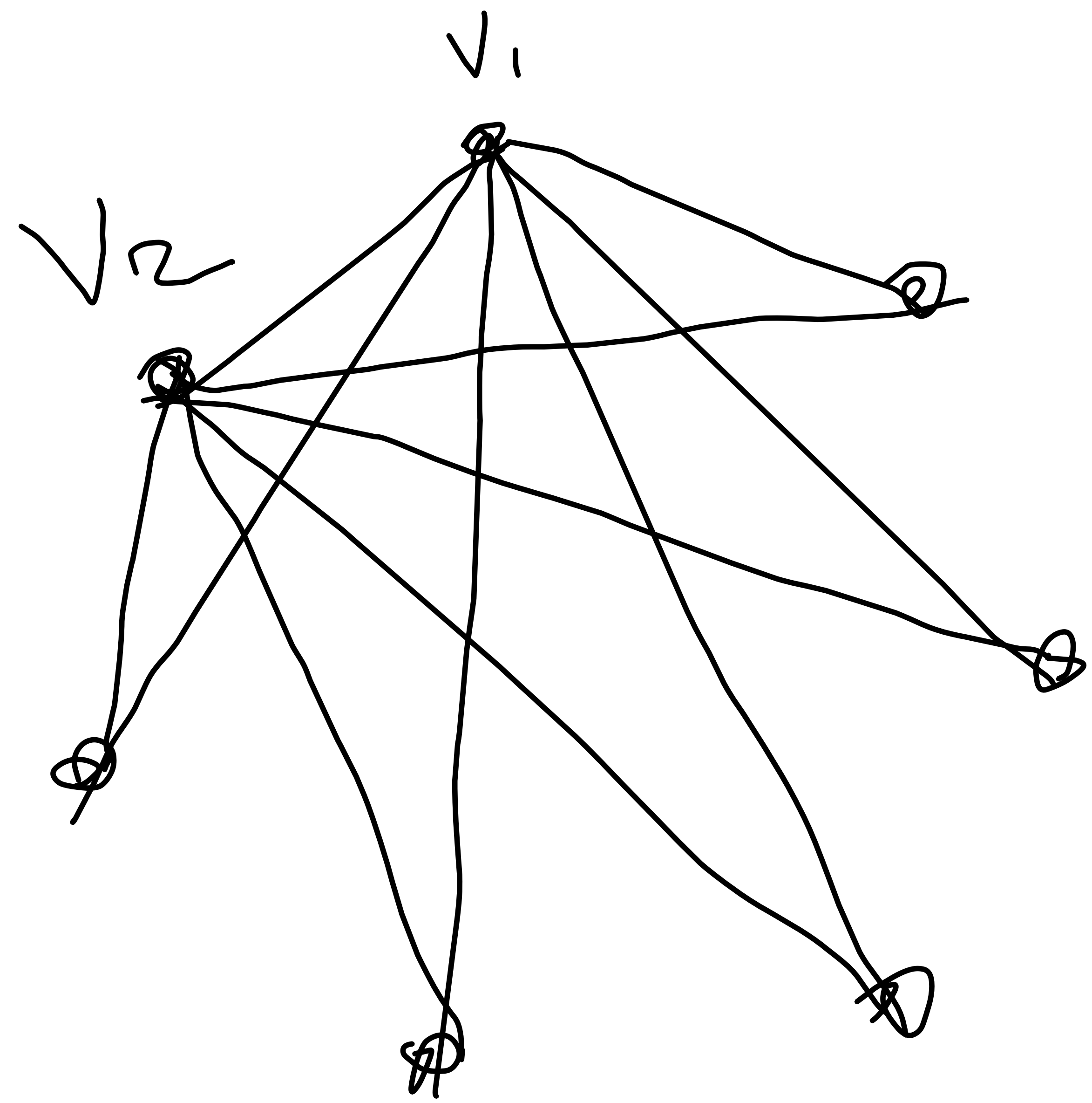




$(1, 3, 6, 4, 5, 2, 3)$

$$\varepsilon = \frac{28}{2} = 14$$

$$\varepsilon(K_7) = \frac{7 \cdot 6}{2} = 7 \cdot 3 = 21$$



$(6, 6, 5, 4, 3, 3, 1)$

$$v_1\; a\; v_2\; \cancel{b\; v_3\; c\; v_4\; d}\; v_2\; e\; v_5\; f\; v_6\; g\; v_7\; h\; v_5\; i\; v_8\; j\; v_9$$

$$v_1\; a\; v_2\; e\; v_5\; \cancel{f\; v_6\; g\; v_7\; h}\; v_5\; i\; v_8\; j\; v_9$$

$$v_1\; a\; v_2\; e\; v_5\; i\; v_8\; j\; v_9$$

set $X \neq \emptyset$

A distance d on X is a function

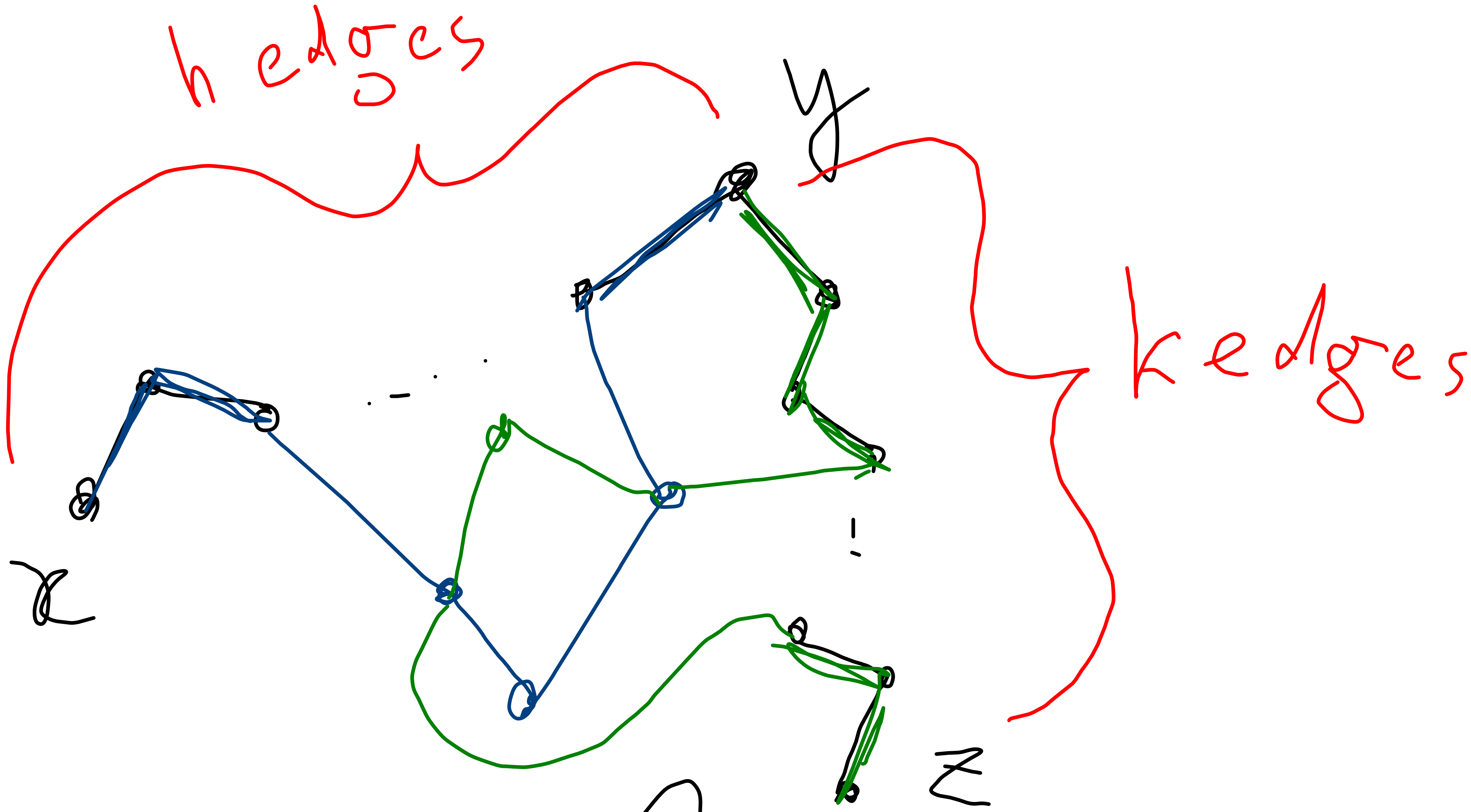
$$d : X \times X \longrightarrow \mathbb{R} \cup \{+\infty\}$$

such that $\forall x, y, z \in X$

1) $d(x,y) \geq 0$ and $d(x,y) = 0 \iff x = y$

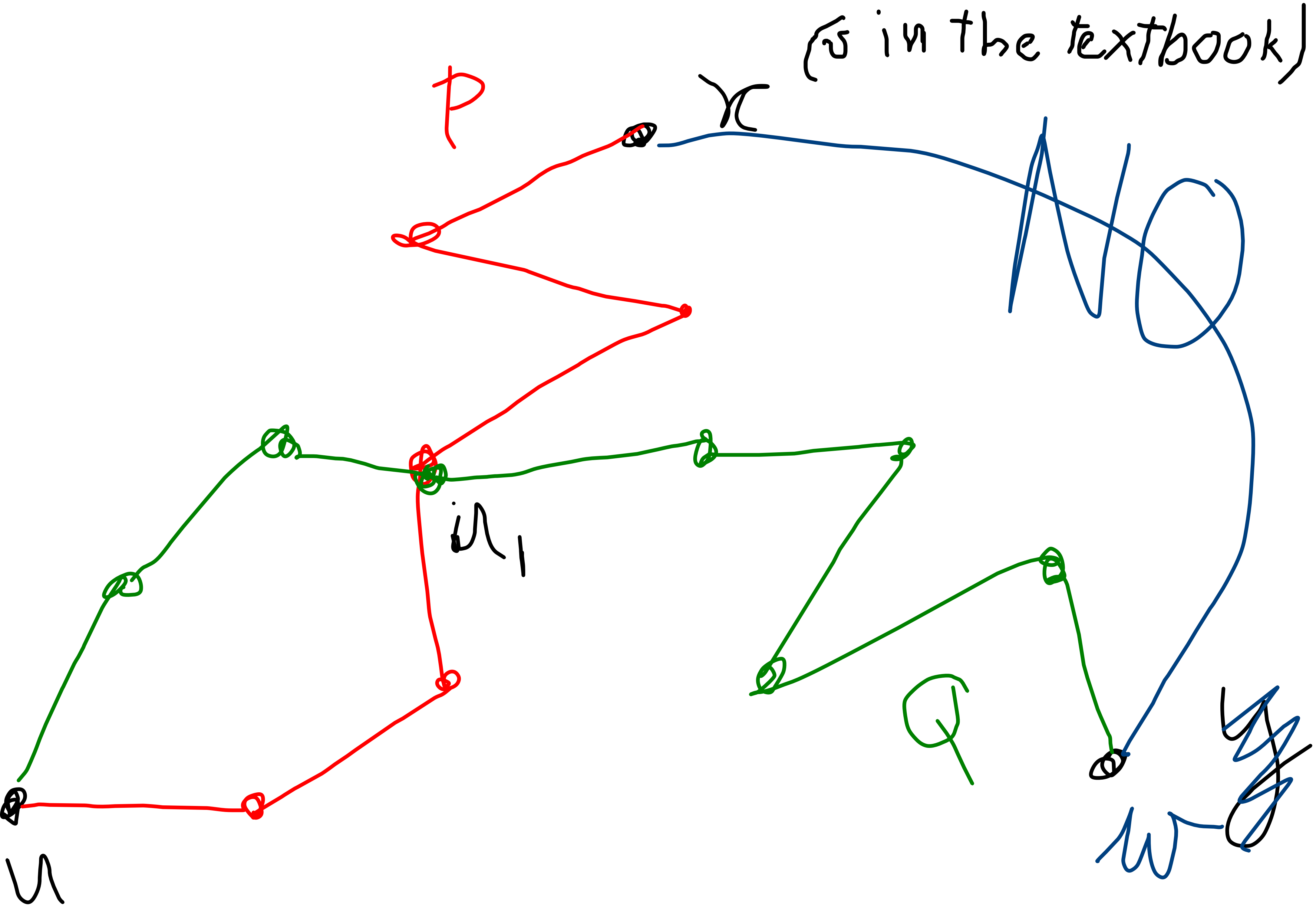
2) $d(x,y) = d(y,x)$

3) $\underset{h}{d(x,y)} + \underset{k}{d(y,z)} \geq d(x,z)$



$$d(x,y) + d(y,z) \overset{?}{\geq} d(x,z)$$

$$\quad h \qquad\quad k$$



P
x
(v in the textbook)
NO
u_1
u
Q
w
y

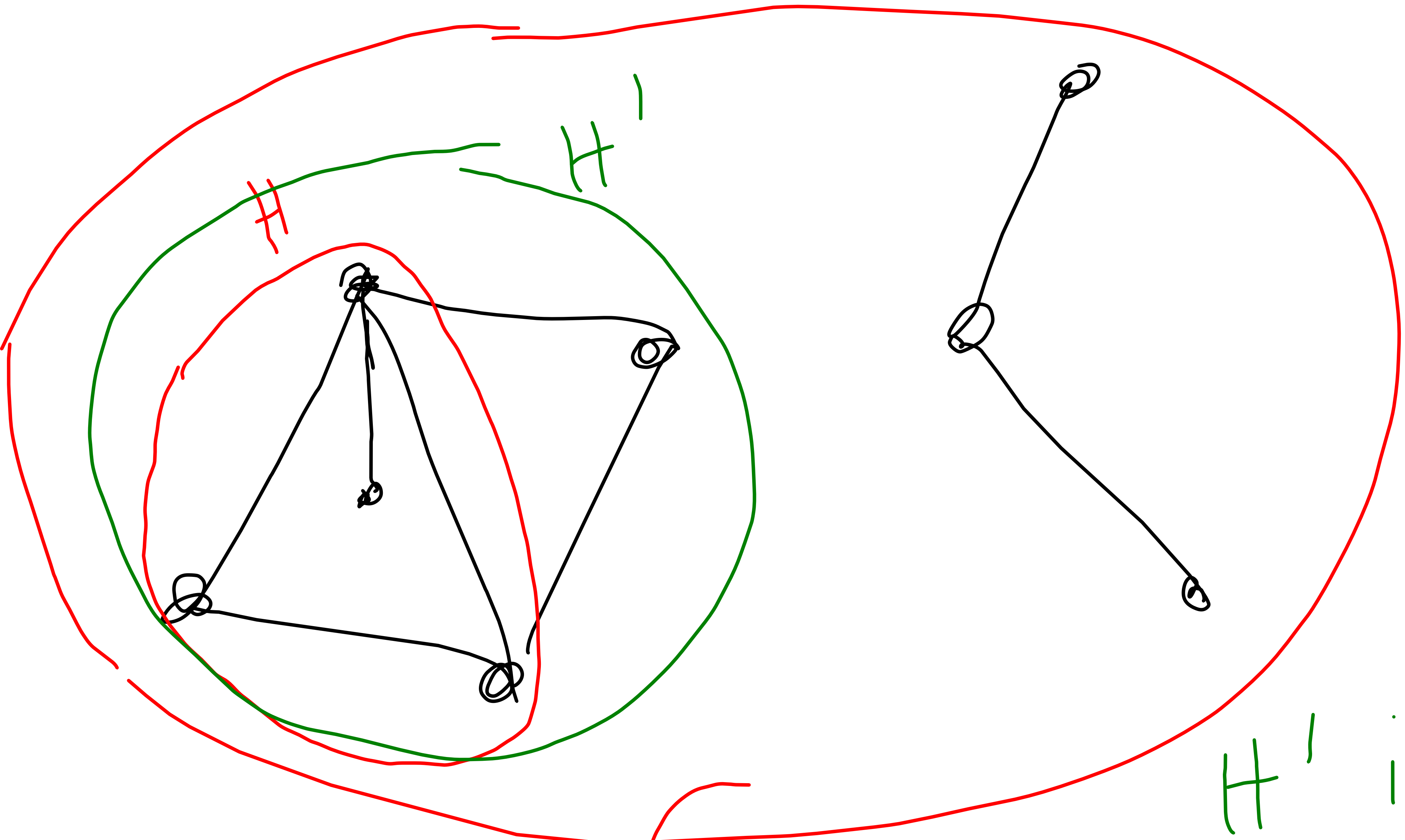
Equivalent definition of connected graph

A graph G is said to be connected if, for any two vertices u, v in G, there exists at least one path from u to v.

Equivalent definition of component

In a graph G, a (connected) component is a subgraph H that is connected and is maximal with respect to this property

it means: H is connected and there is no connected subgraph H' containing H

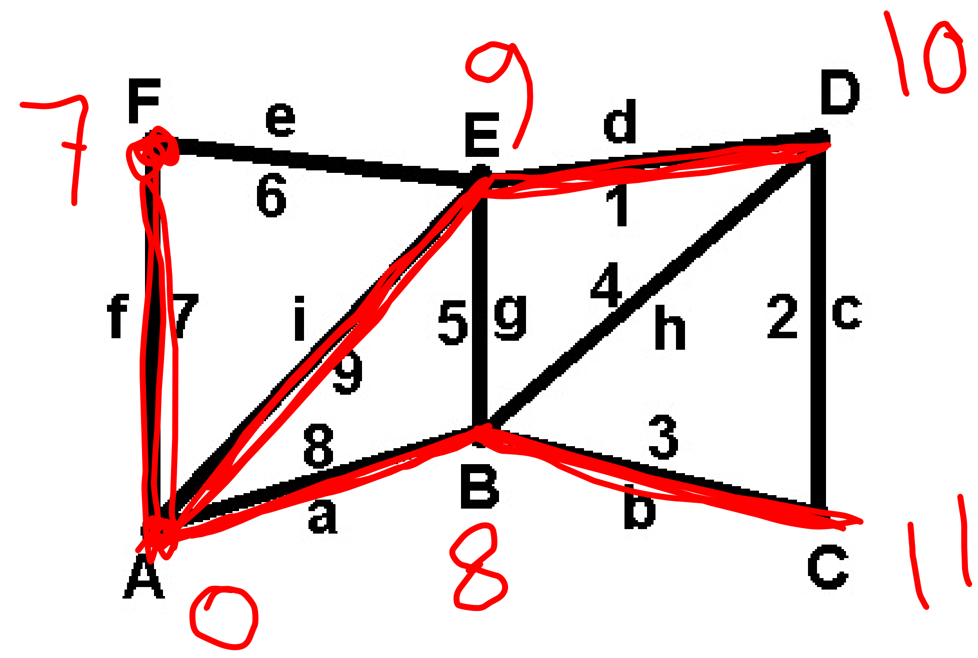


is H a component?

No, because $H' \supset H$ and is connected

H' is a component?

Yes, it is connected and is not contained in a connected subgraph of G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11