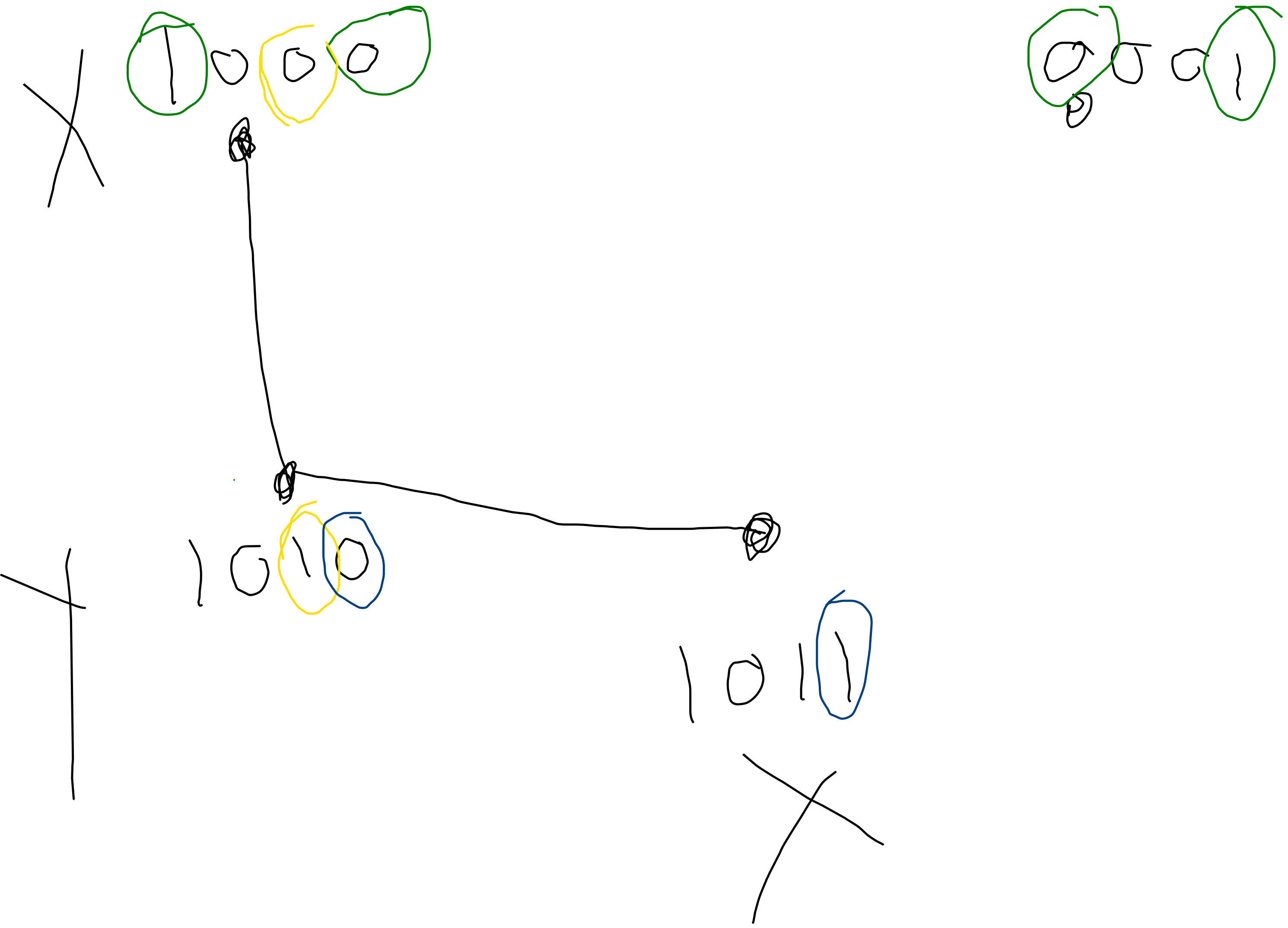
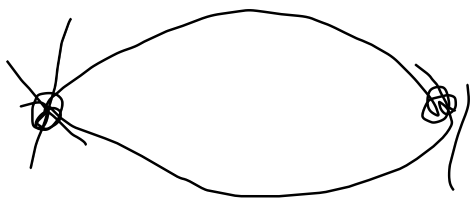
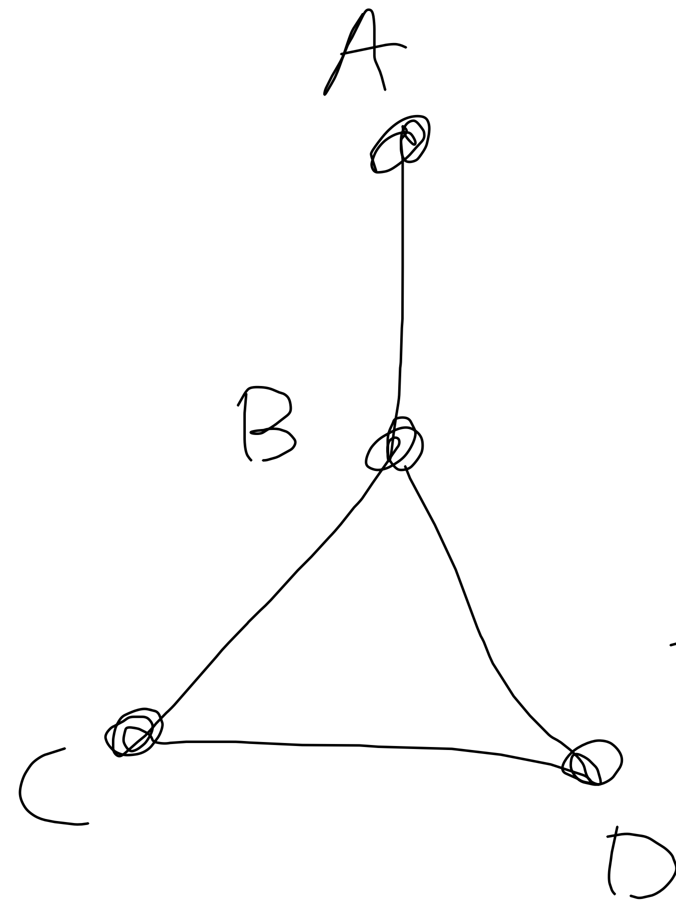






$A \longmapsto A$

$B \longmapsto B$

$C \longmapsto C$

$D \longmapsto D$

$A \longmapsto A$

$B \longmapsto B$

$C \longmapsto D$

$D \longmapsto C$

$$\nu \left\{ \begin{array}{l} \delta \le d(v_1) \le \Delta \\ \delta \le d(v_2) \le \Delta \\ \vdots \\ \delta \le d(v_\nu) \le \Delta \end{array} \right.$$

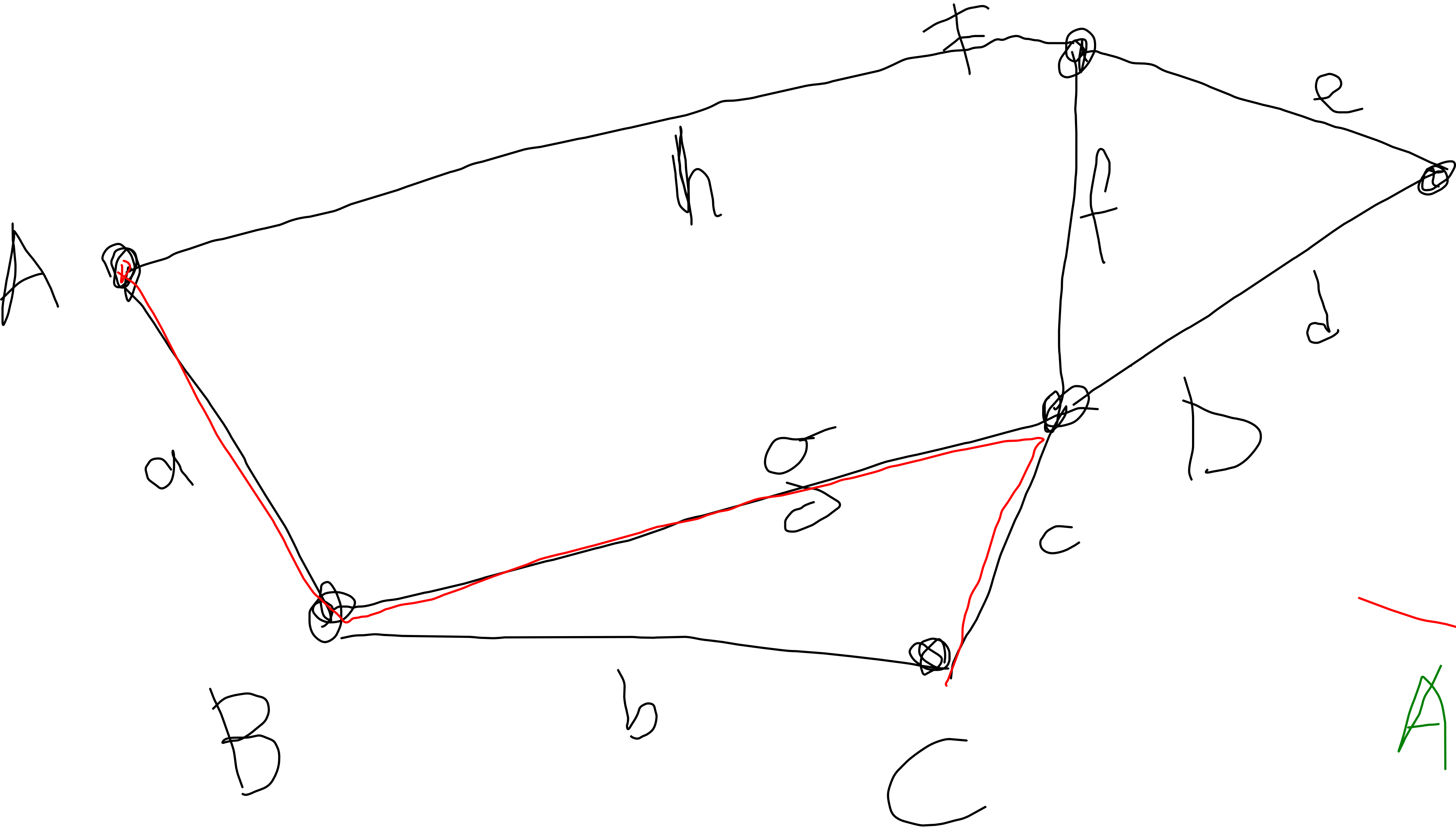
$$\nu\delta \le \sum_{i=1}^{\nu} d(v_i) \le \nu\Delta$$

$$\sum_{i=1}^{\nu} d(v_i) = 2\varepsilon$$

$$\frac{1}{\nu}$$

$$\nu\delta \le 2\varepsilon \le \nu\Delta$$

$$\delta \le \frac{2\varepsilon}{\nu} \le \Delta$$



~~A B F~~

~~A a B e C~~

A a B g D c C

A B D C

A a B b C

DEF – A relation $\mathcal{R}$ on a set X is said to be an equivalence relation if these three conditions hold:

1) $\forall x \in X \quad x \mathcal{R} x$ (reflexivity)

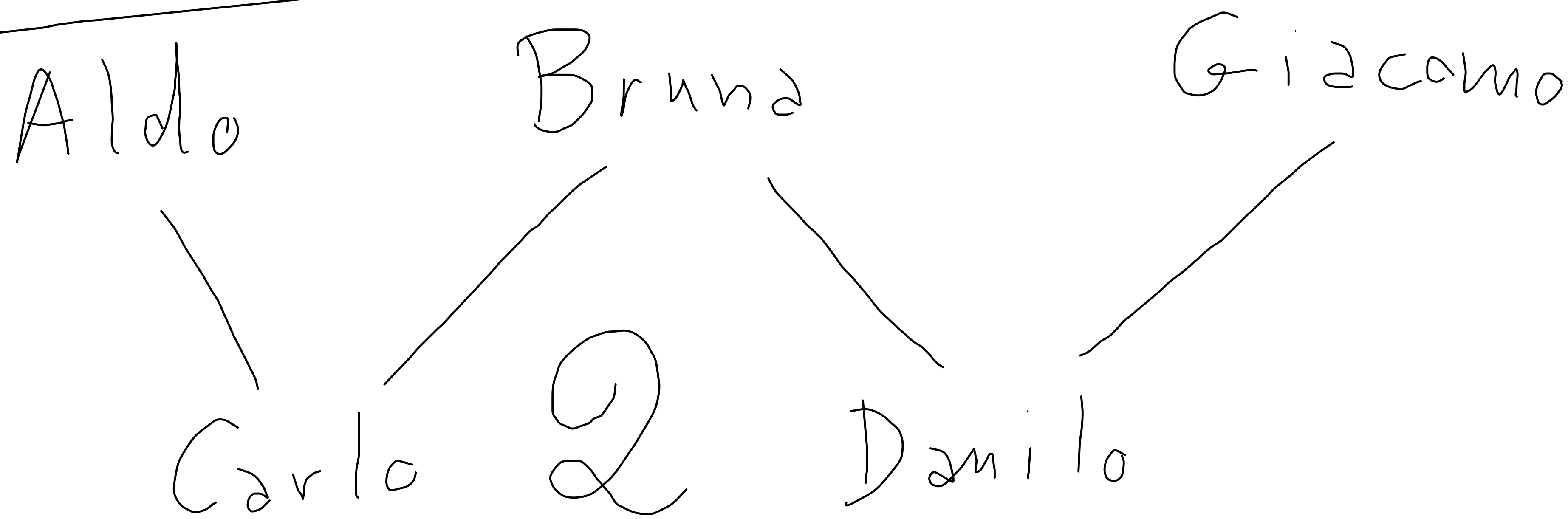
2) $\forall x, y \in X \quad x \mathcal{R} y \iff y \mathcal{R} x$ (simmetry)

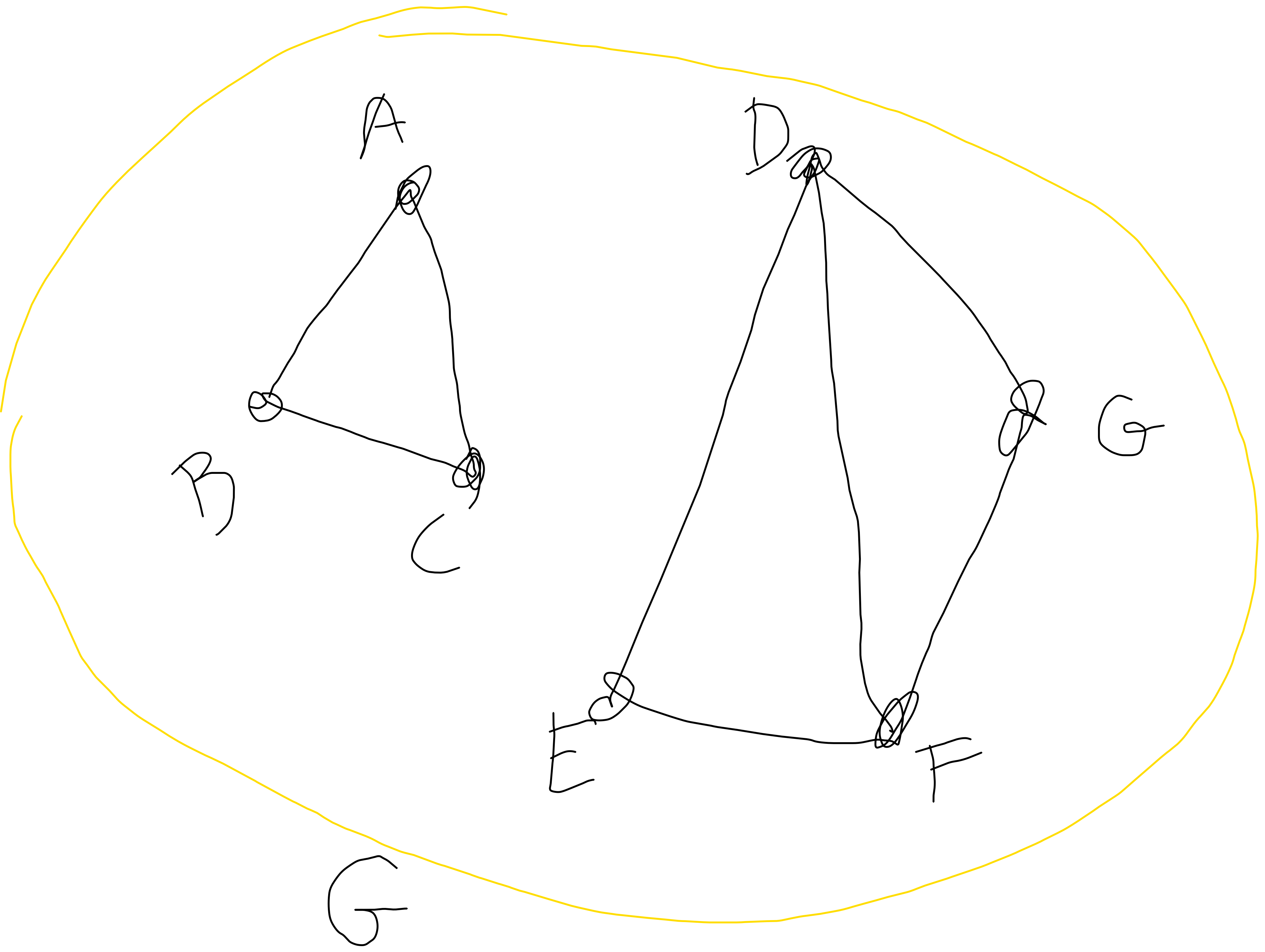
3) $\forall x, y, z \in X \quad (x \mathcal{R} y) \wedge (y \mathcal{R} z) \Rightarrow (x \mathcal{R} z)$ (transitivity)

DEF – A partition of a set X is a family S of subsets of X, $S = \{X_1, X_2, \dots, X_n\}$ such that 1) $X_1 \cup X_2 \cup \dots \cup X_n = X$

and 2) $i \neq j \Rightarrow X_i \cap X_j = \emptyset$

THM- Given an equivalence relation $\mathcal{R}$ on a set X, calling equivalence class every subset of X of elements y such that for the same x we have $y \mathcal{R} x$, the family of equivalence classes is a partition of X





$\{A, B, C\}$

$\{D, E, F, G\}$