

Reminder III

- automorphism = inner isomorphism (\sim symmetries)
 \uparrow 2 bijective maps + compatibility conditions

the set of automorphisms is a group.

\implies orbit of a vertex, orbit of an edge, partition in orbits.

- clique (tightly connected subgraph), clique number $\omega(G)$

independent set, independence number $\alpha(G)$

component, number of components $c(G)$ graph invariants

cut-vertex (= cutpoint), cut-edge (= bridge).

- Tree \iff oriented tree , also acyclic digraph
unoriented tree

Various equivalent definitions of a tree

(classification of irreducible trees)

- Rooted tree, shortest path tree, (anti)-arborescence

height \equiv depth, ascendants (\equiv ancestors), descendants,

parent, child (children).