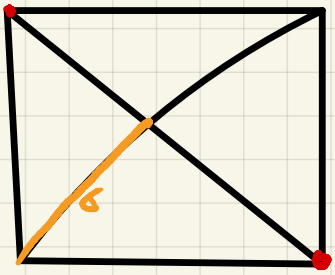
Abstract Simpl. Cmplx

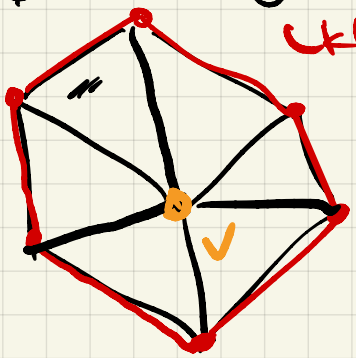
X — abstract s.c

$$Lk_X(\sigma) = \{\alpha \mid \alpha \cup \sigma \text{ simplex},\ \alpha \cap \sigma = \emptyset,\ \alpha \neq \emptyset\}$$

↳ simplex



$Lk(\sigma)$.



* if locally euc, link is (dim of σ)

Ex 7

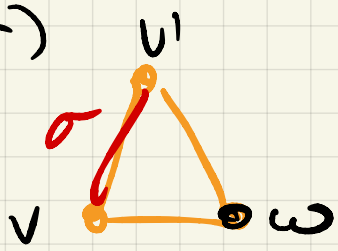
(a) $Lk_{Lk_X(\sigma)}(\gamma) = Lk_X(\sigma \cup \gamma)$

$= \{\alpha \in Lk_X(\sigma) \mid \alpha \cup \gamma \text{ simpl},\ \alpha \cap \gamma = \emptyset\}$ (α in $Lk_X(\sigma)$)

$= \{\alpha \text{ simpl.} \mid \alpha \cup (\sigma \cup \gamma) \text{ simpl},\ \alpha \cap (\sigma \cup \gamma) = \emptyset\}$

.... α is true! break down what it

(b) $Lk_X(\sigma) = \bigcap_{v \in \sigma} Lk_v(\sigma)$



$Lk(\sigma) = \emptyset$

$Lk(v) \cap Lk(v') = \omega$

Def

A abs. simpl. complex is a flag complex if
finite

- Given S a collection on vertices s.t. every pair $v, v' \in S$ span an edge $\Rightarrow$ S is a simplex.

Ex: true if X is flag cmplx.

Order complexes are flag complexes.

(c) $Lk_X(\sigma) = Star_X(\tau) \cap \partial_X(\tau)$

False.