

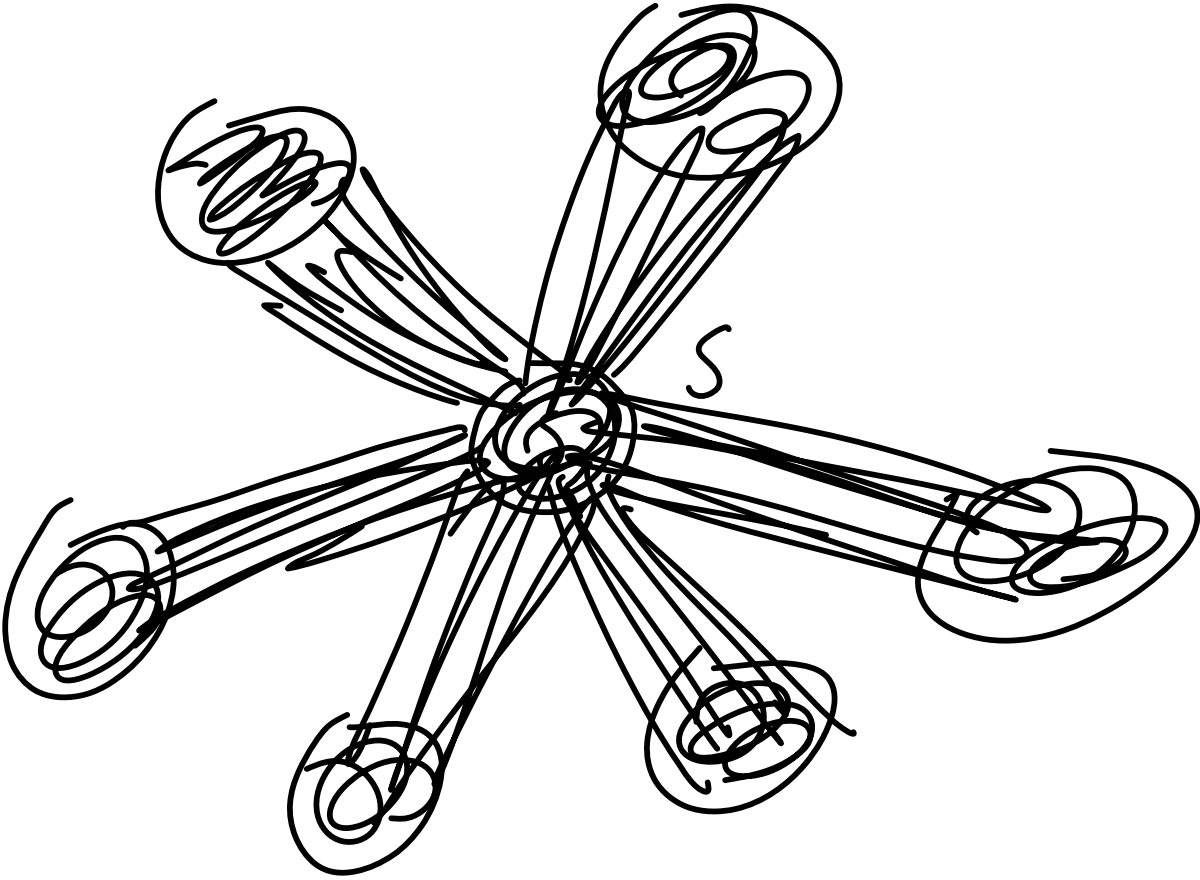
$$\underline{q(G-S) \leq |S|}$$

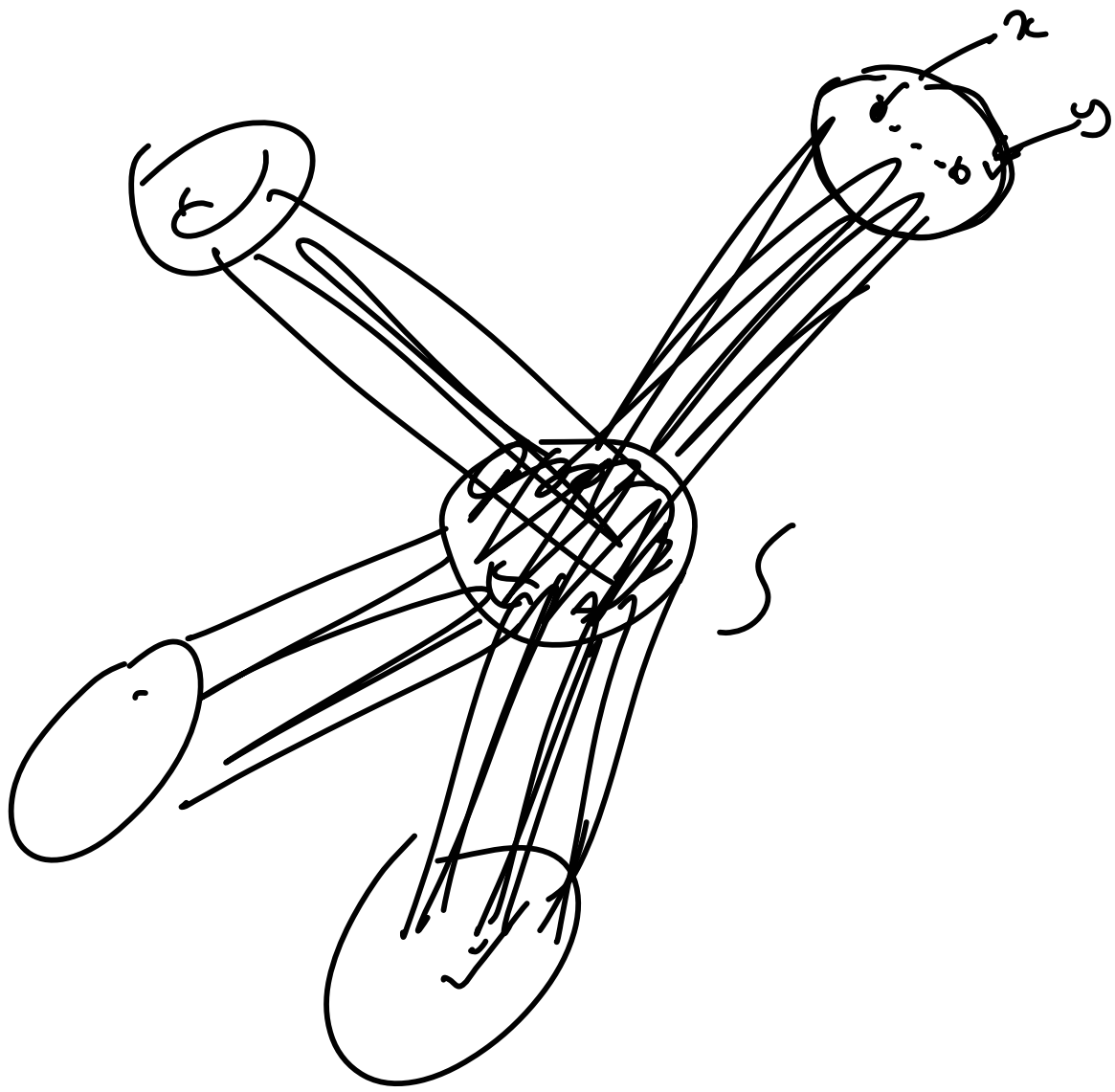
for all $S \subseteq V(G)$

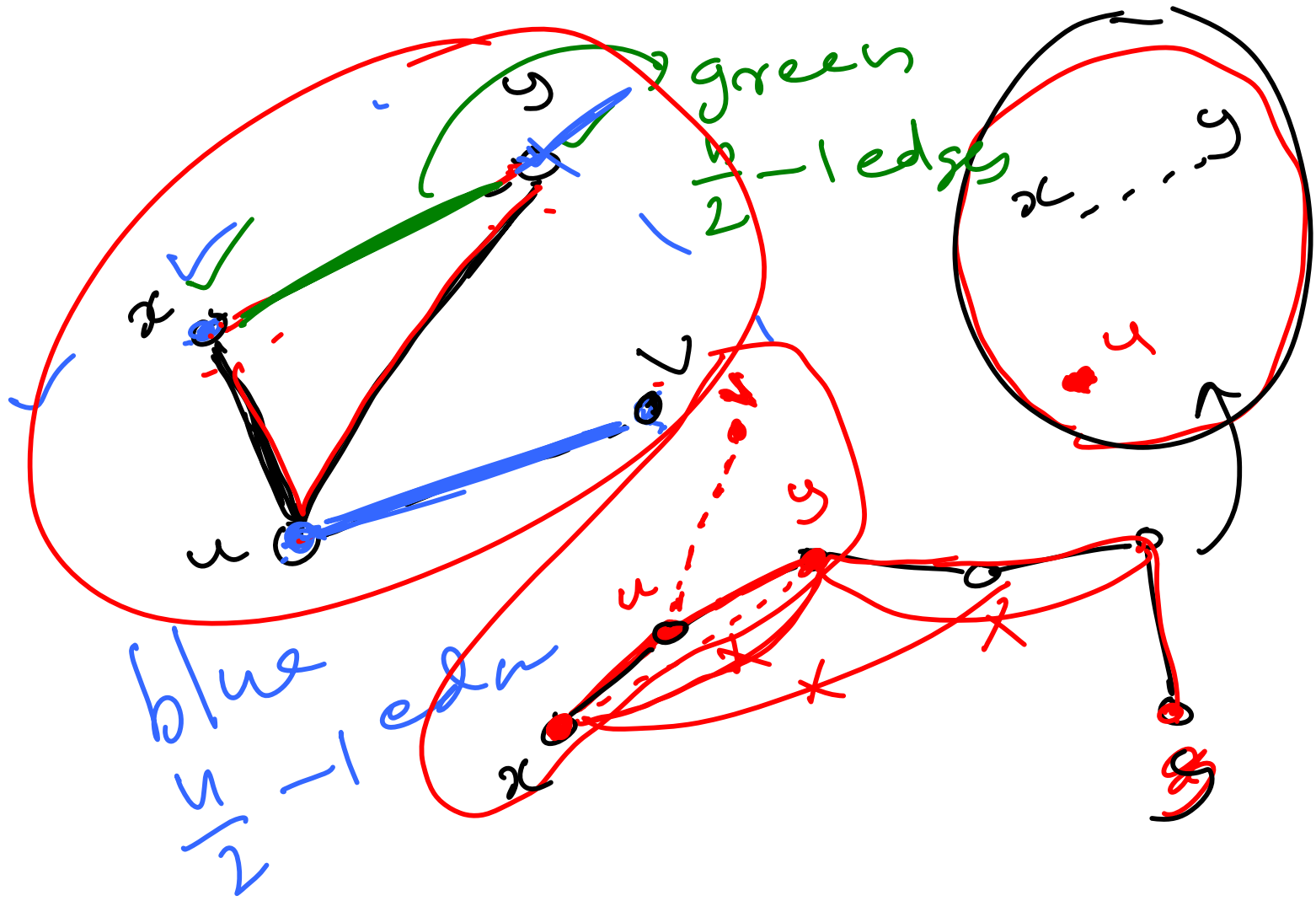
G' of G

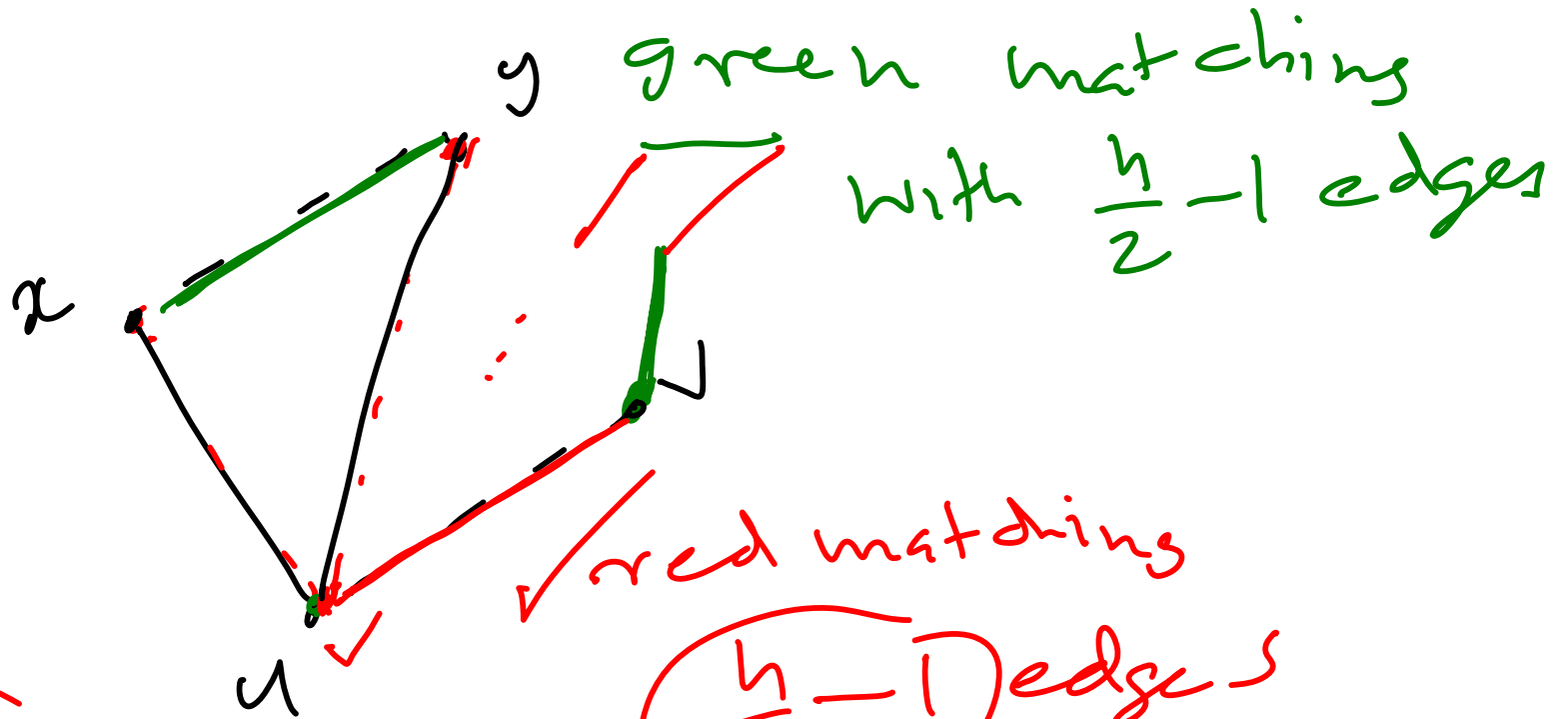
—

edge maximal w.r.t to
the property of not
having a perfect matching.









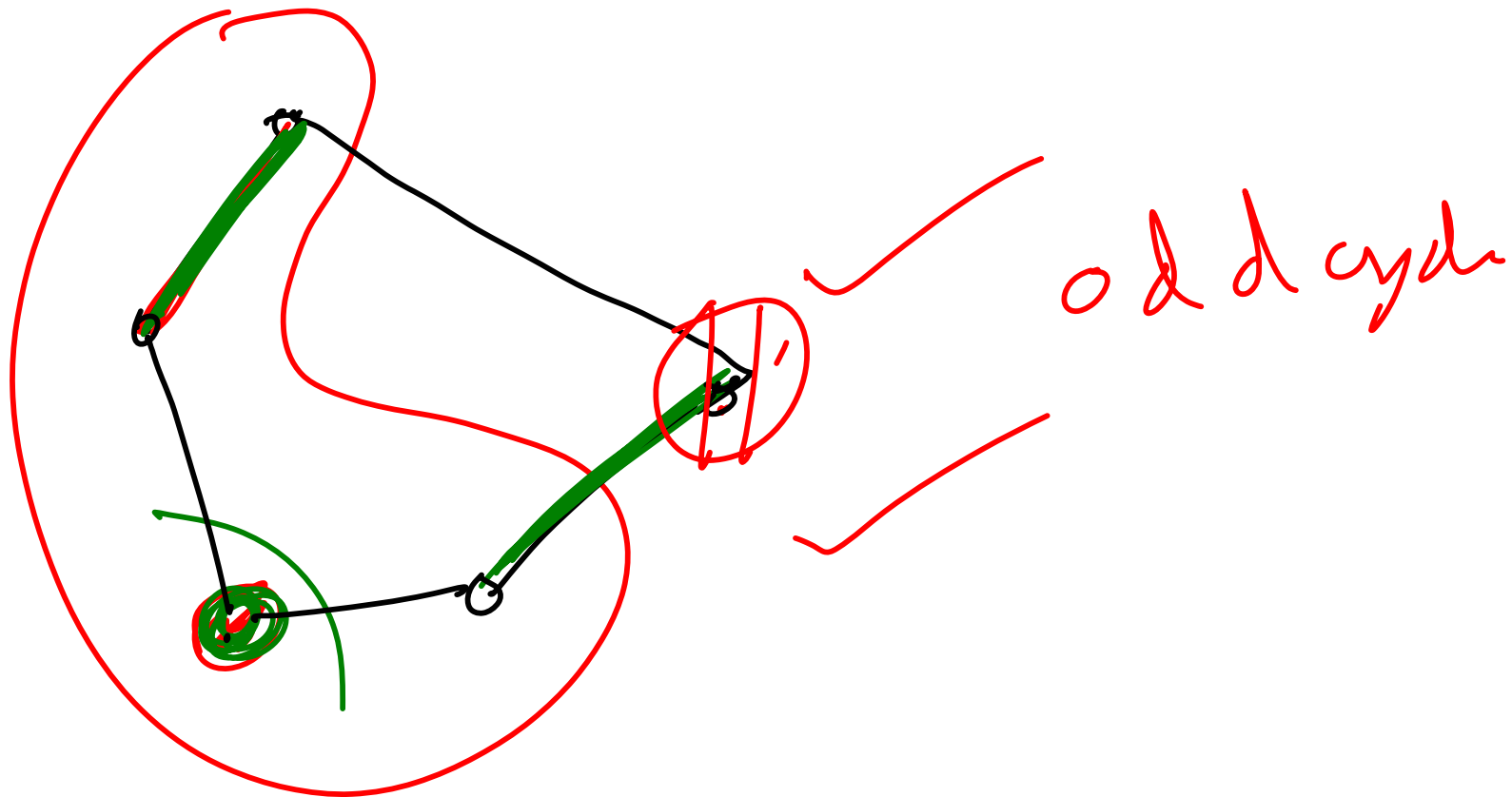
$$\frac{h}{2} - 1$$

red \rightarrow

$\frac{h}{2}$ sided ✓

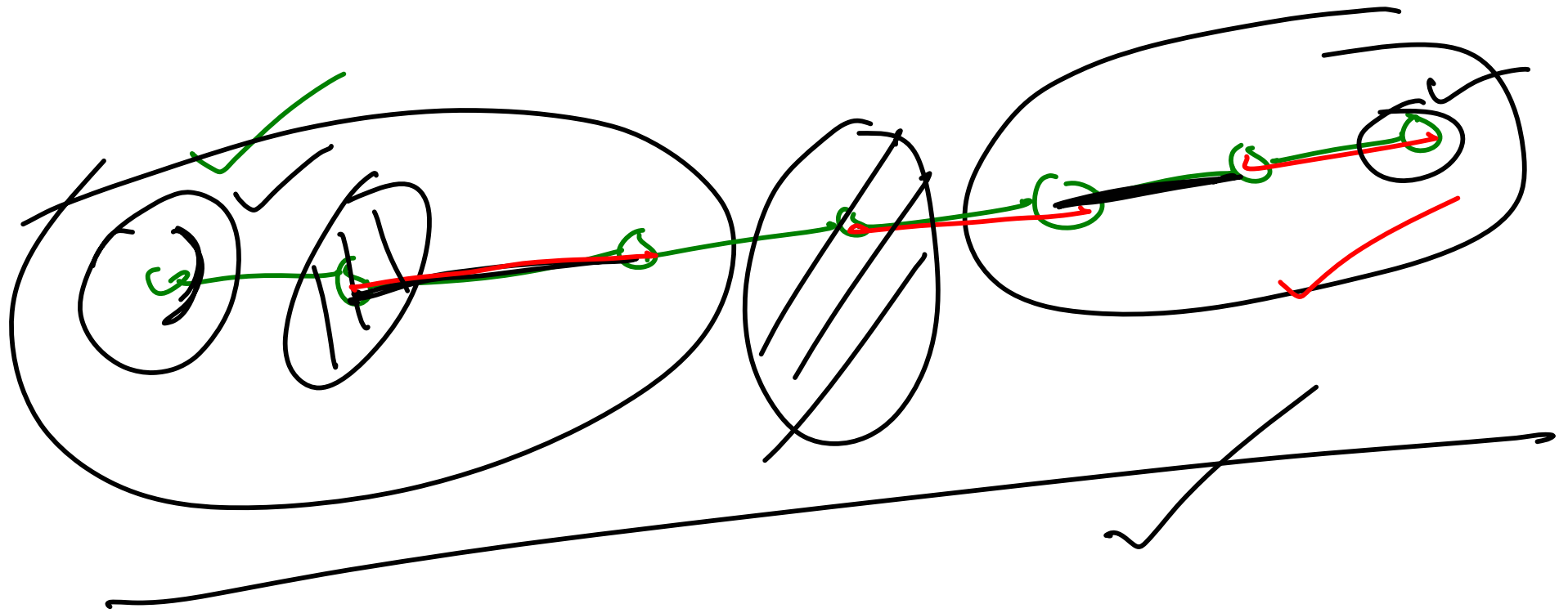
$$\frac{h}{2} - 1 \text{ edges}$$

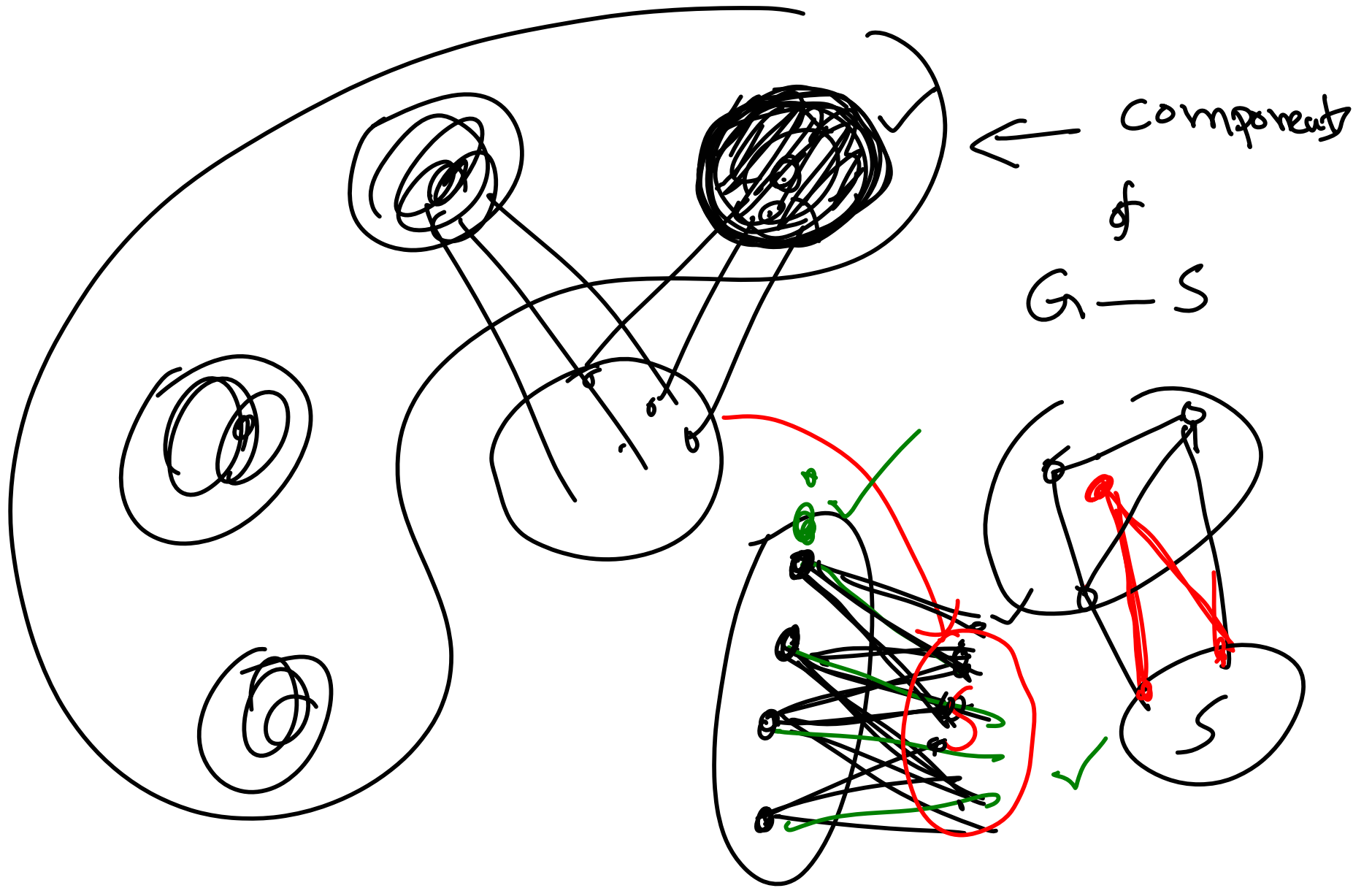
$$\frac{h}{2} \checkmark$$

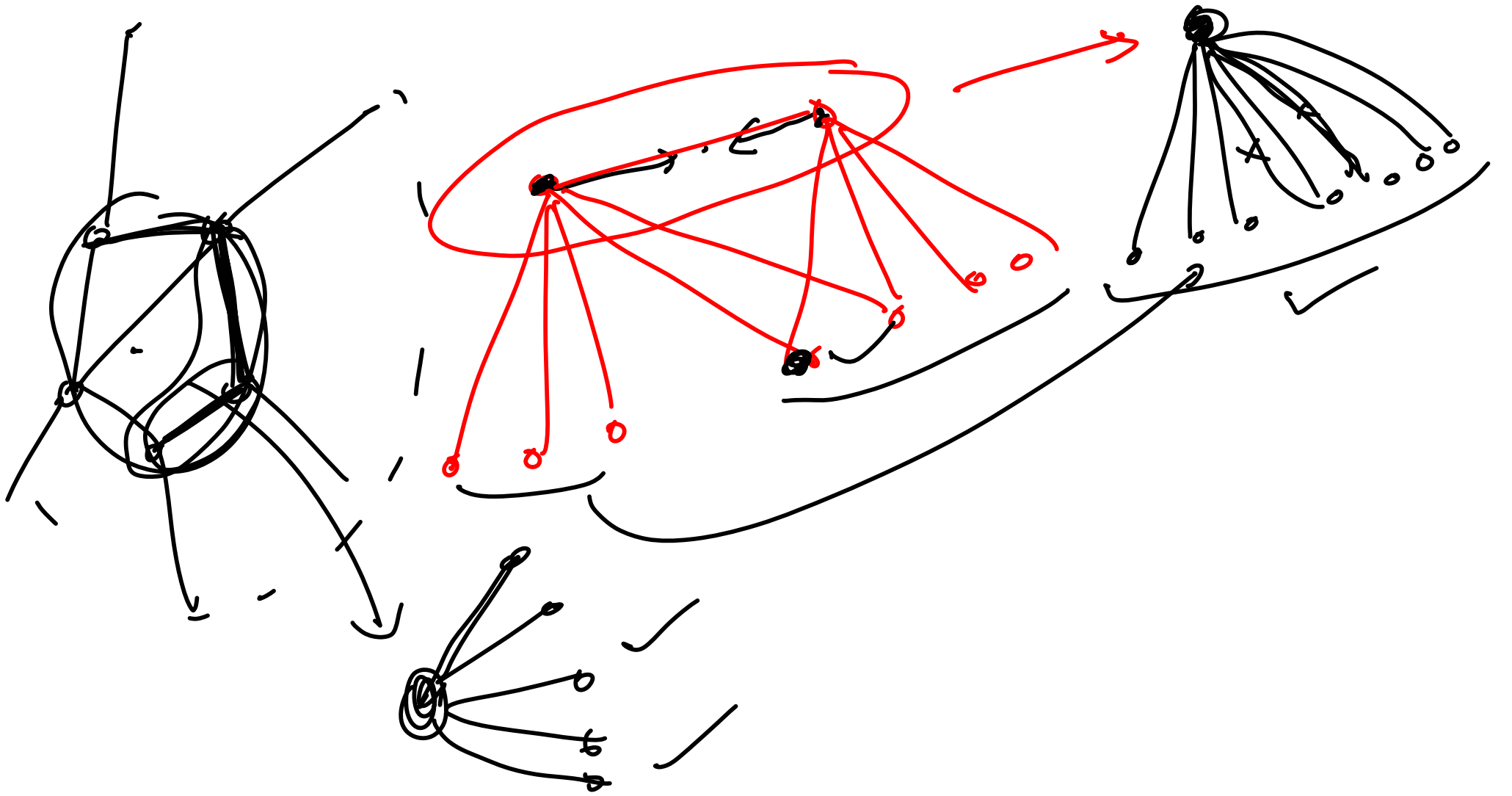




where
 n is odd



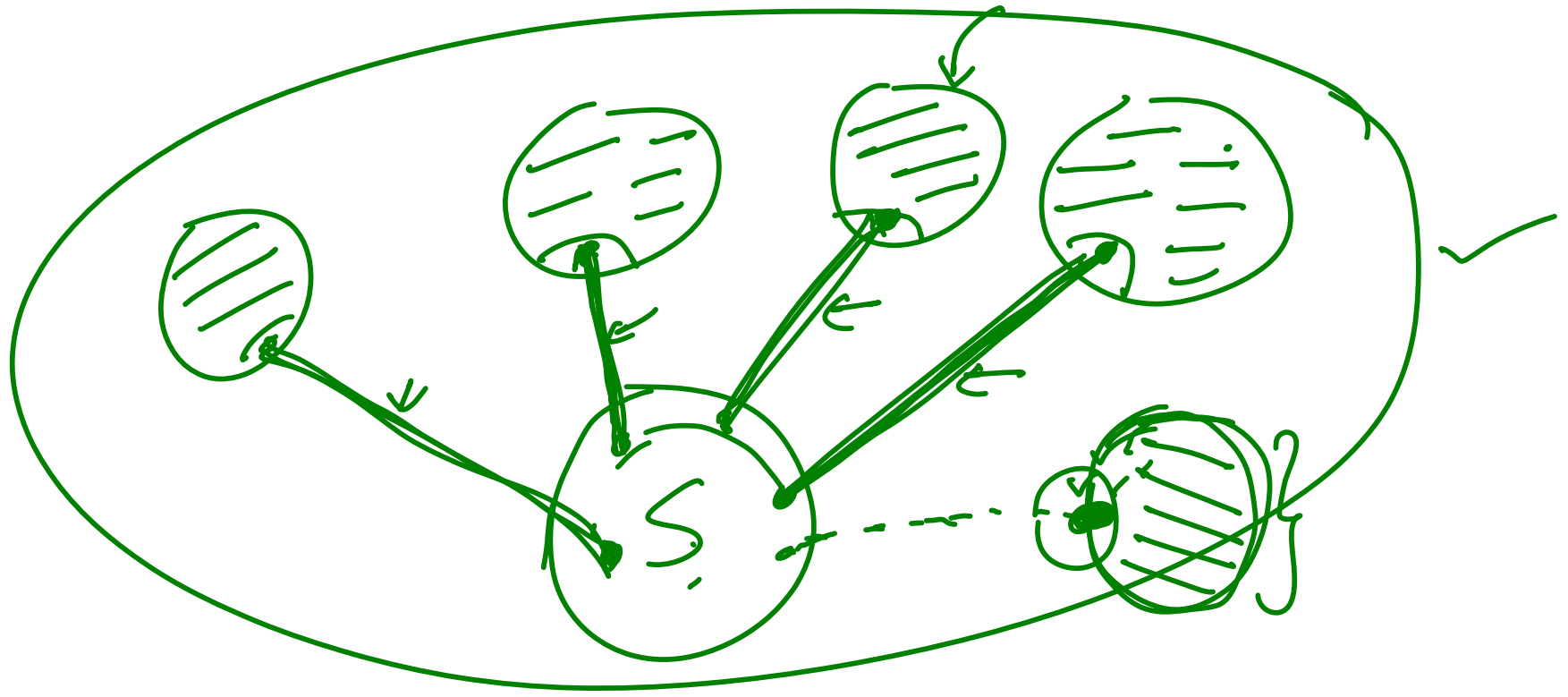




$$|S| \leq \# \text{ components of } G-S$$

$$|S| = \# \text{ components} \quad \left\{ \begin{array}{l} \text{this} \\ \text{p.m.} \end{array} \right.$$

$$|S| < \# \text{ components} \quad \left\{ \begin{array}{l} \text{NO PM} \end{array} \right.$$



⇒ ∃ a P.M

$$S^D \subseteq V(G)$$

$$d(s) = 2(G - S) - |S|$$



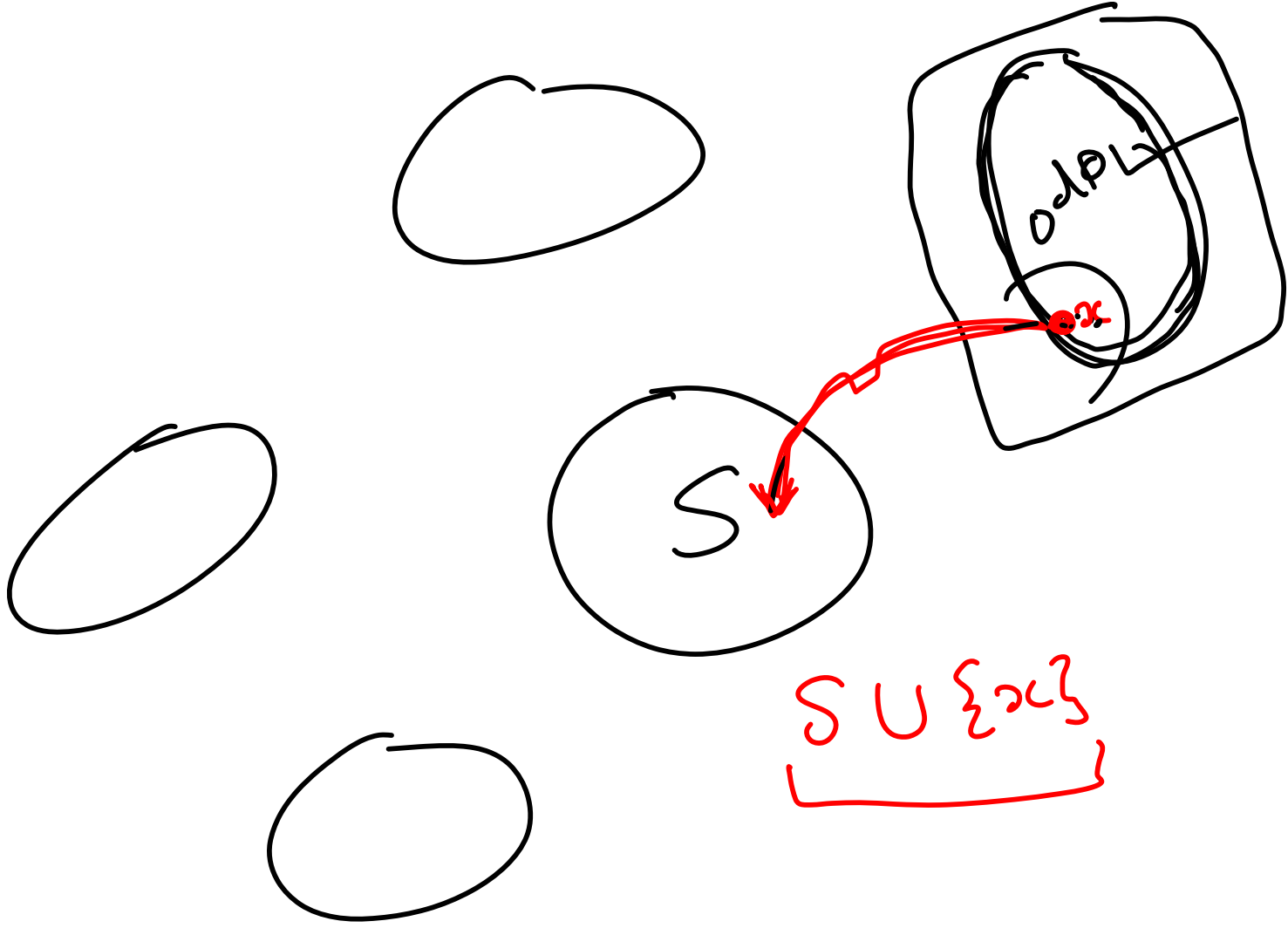
$\{ s : d(s) \text{ is maximum} \}$

biggest set in S



$$d(s) \geq d(s'), \quad \forall s' \neq s$$

$$|s| \geq |s'|, \quad \forall s', \text{ with } d(s') = d(s)$$



$$S' = S \cup \{x\}$$

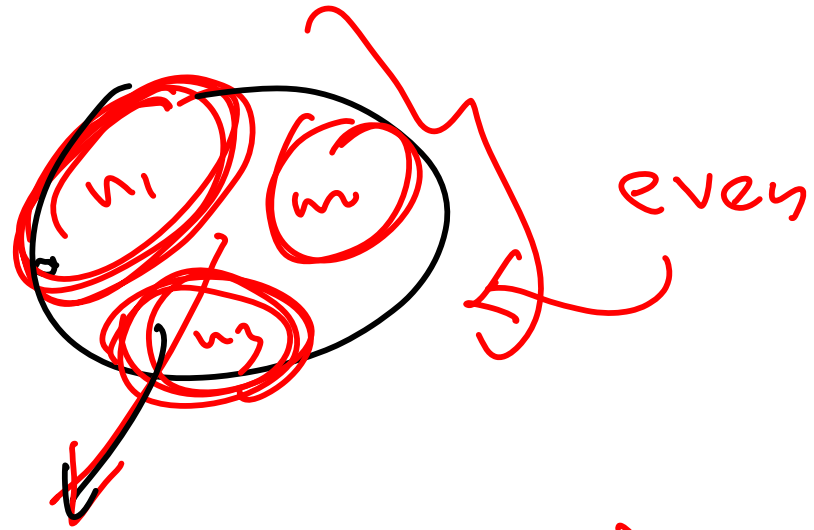
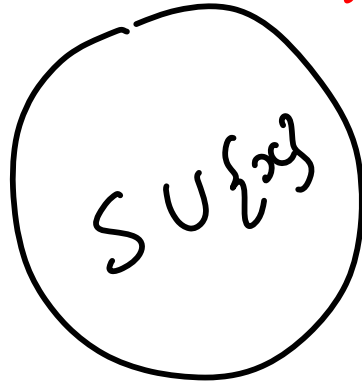
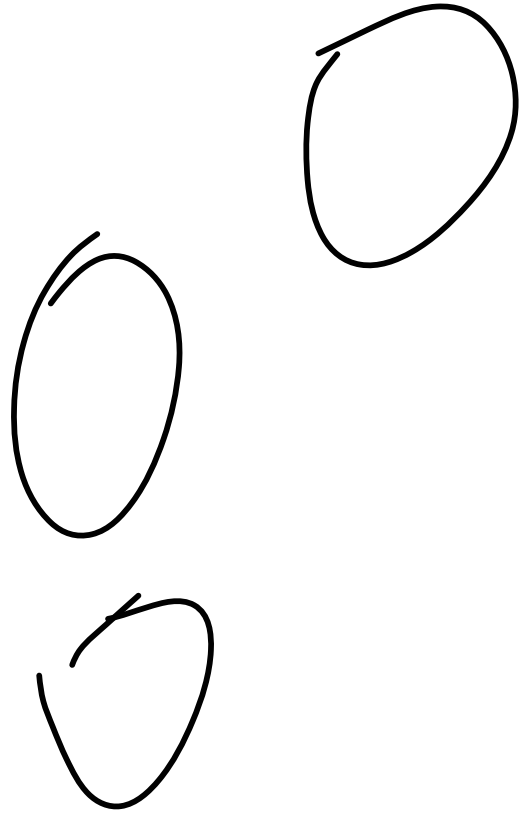
$$d(S') = q(G - S') - |S'|$$

$$d(S') \geq d(S)$$

$$\textcircled{d(s') \neq d(s)}$$

$$d(s') \neq d(s) \checkmark$$

$$d(s') < d(s).$$

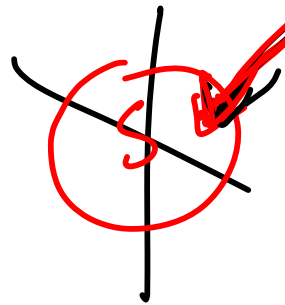
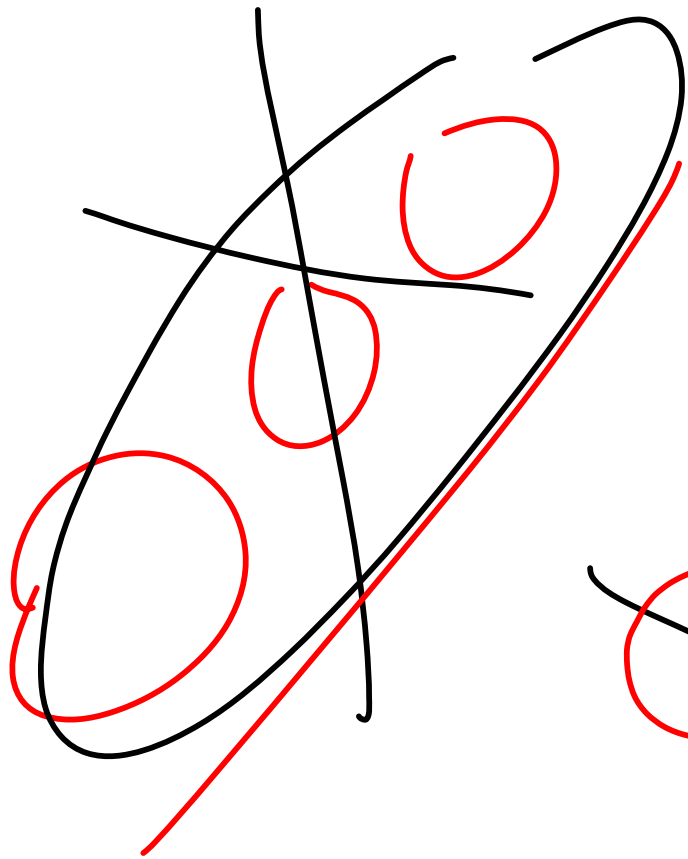


$$q(G-S') \geq q(G-S) + 1$$

$$\begin{aligned} \underline{d(s')} &= q(n-s') - |s'| \\ &\Rightarrow \left(q(n-s) + 1 \right) - (|s| + 1) \\ &= q(n-s) - |s| = \underline{\underline{d(s)}} \end{aligned}$$

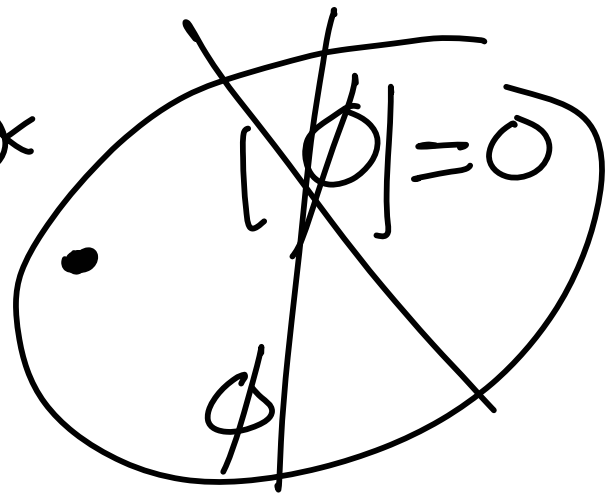
each component is odd

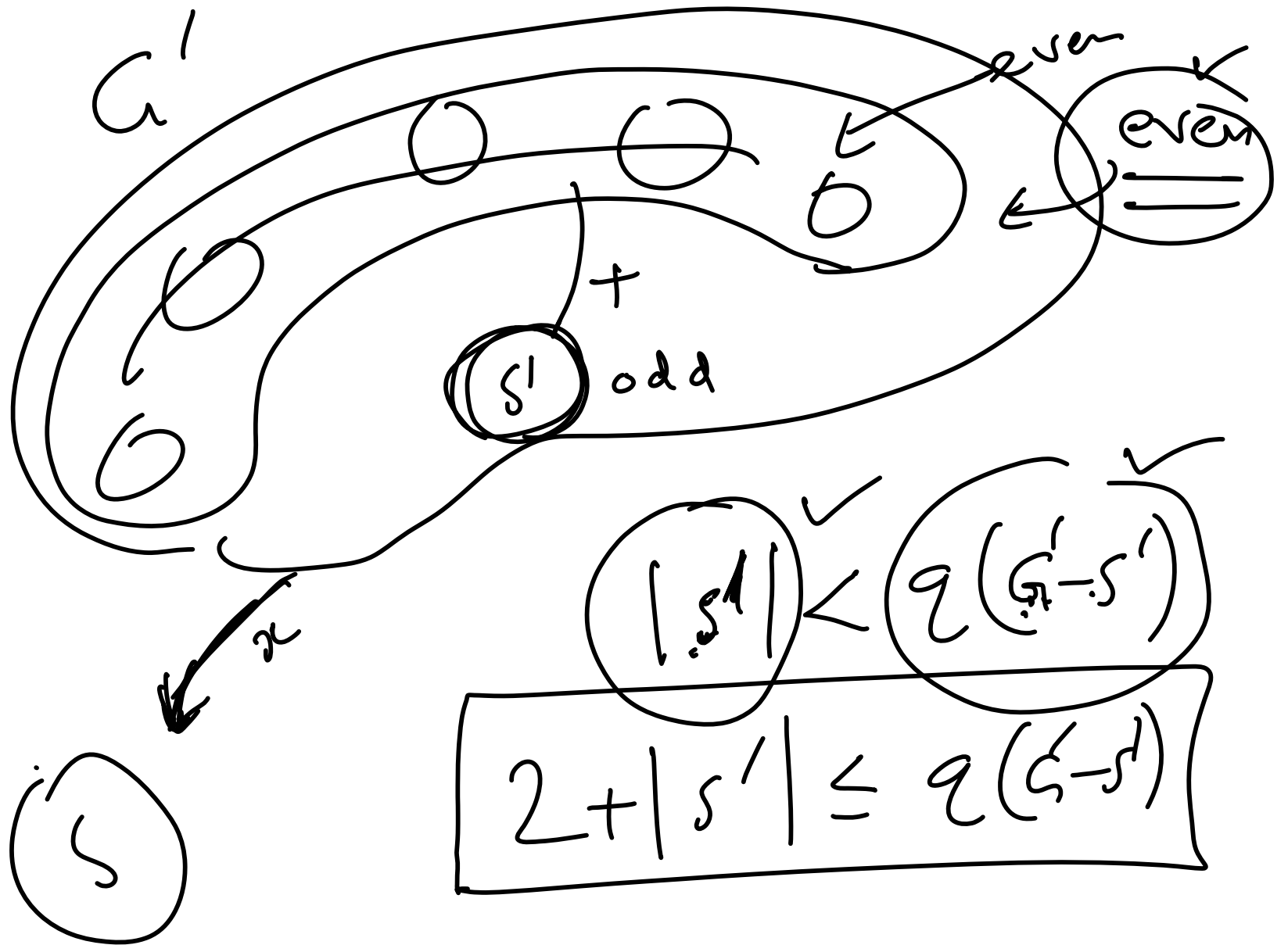
each component is
factor critical



$C-x$

bad set





$$S \cup \{x\} \cup S' = T \checkmark$$

