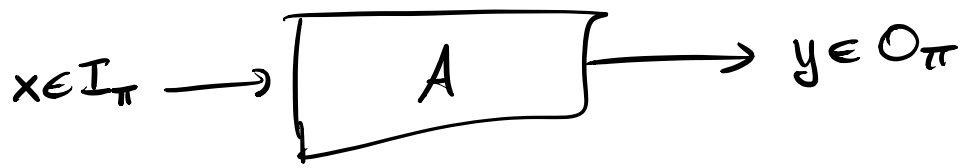
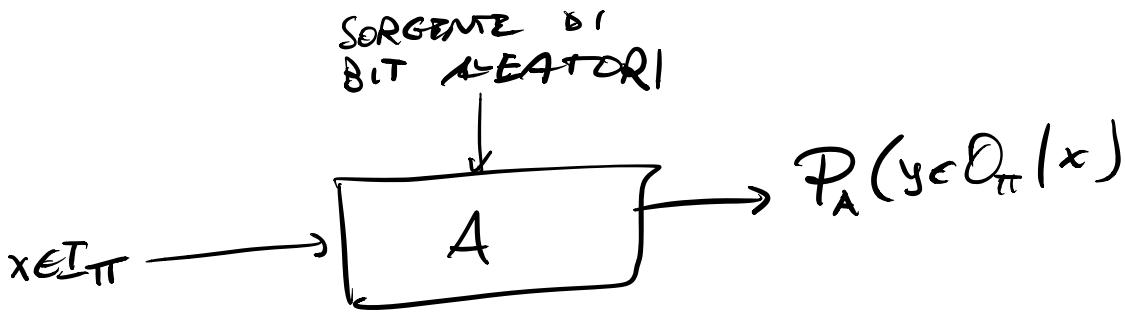
ALGORITMI PROBABILISTICI





- Algoritmi probabilistici per problemi decisione

Monte-Carlo → - TEMPO DET.
- SOL. CORRETTA SOLO CON UNA CERTA PROB.

one-sided two-sided

Las Vegas → - SOL. CORRETTA
- TEMPO PROBABILISTICO

PRIMES $\in$ co-NP $\cap$ NP

PRIMES $\in$ P

$\tilde{O}(|n|^6)$

Test di Miller-Rabin

PROBLEMA MINCUT GLOBALE

INPUT: $G = (V, E)$

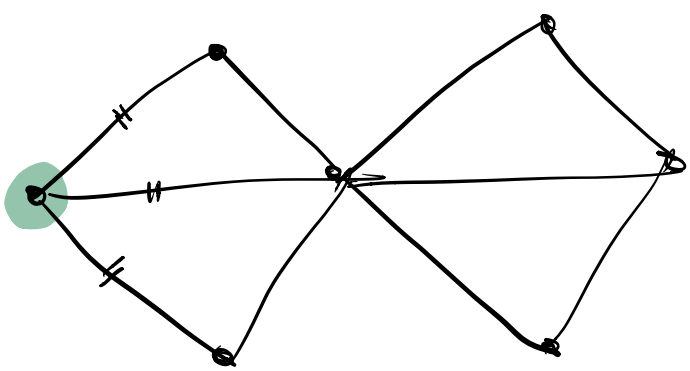
SOLUZIONI AMMISSIBILI:

$$V = V_1 \cup V_2$$

$$V_1 \neq \emptyset \qquad V_2 \neq \emptyset$$

COSTO: $\left| \{ e \in E \mid e \cap V_1 \neq \emptyset,\ e \cap V_2 \neq \emptyset \} \right|$

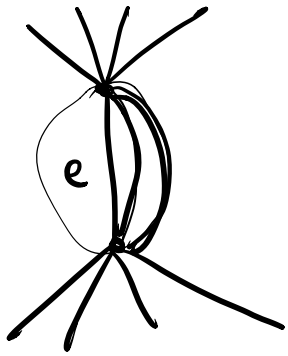
TIPO: MIN



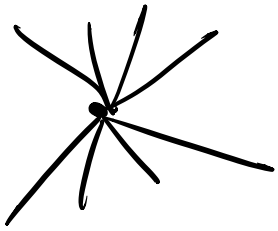
Lemma: Se esiste un vertice di grado d, esiste un taglio minimo E^* con

$$|E^*| \leq d$$

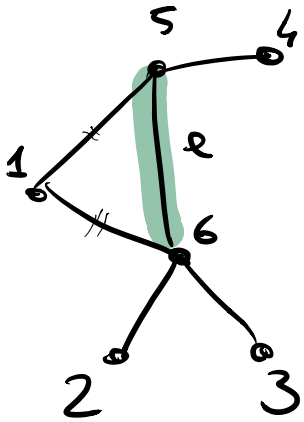
G

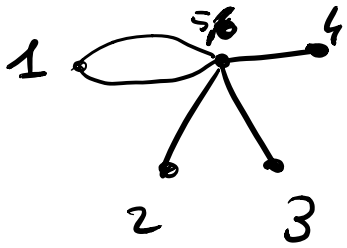


$\Rightarrow G \downarrow e$



G





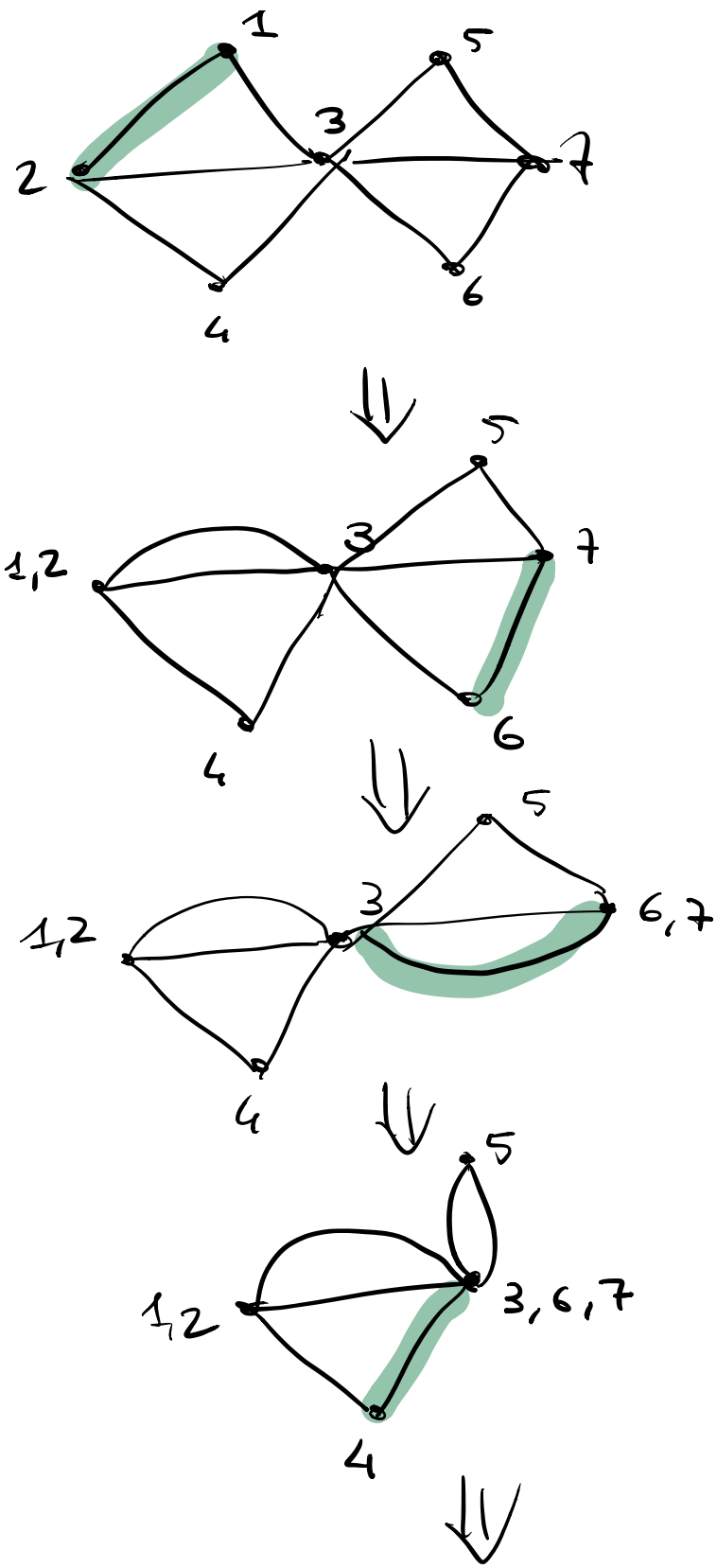
$G \downarrow e$

INPUT: $G = (V, E)$

- Se G non è connesso, output una qualunque componente
- Altrimenti

  <u>while</u> $|V| > 2$

  - scegli un lato a caso e
  - $G = G \setminus e$
- Output uno dei due vertici


1
5
3
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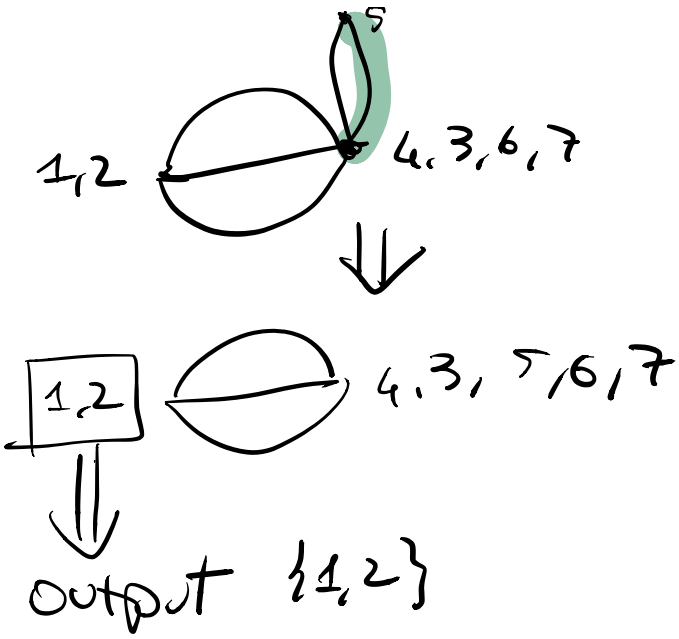
4



output $\{1,2\}$