

$$\begin{aligned}
 tw(G - e) &\leq tw(G) \\
 tw(G / e) &\leq tw(G) \\
 tw(G - uv) &= tw(G) \\
 &\quad \text{wenn } \deg(u) = 2
 \end{aligned}$$

Minorentheorie

$\exists \mathcal{F}_n$ endl. Menge.

$$\text{tu}(G) \leq n$$

\Leftrightarrow

$$\exists F \in \mathcal{F}_n. F \leq_m G$$

$$\mathcal{F}_1 = \{ \triangle \}$$

$$\mathcal{F}_2 = \{ K_4 \}$$

$$\mathcal{F}_3 = \{ K_5, \dots \}$$

$$|\mathcal{F}_n|$$

1

def repeated_squaring(G):

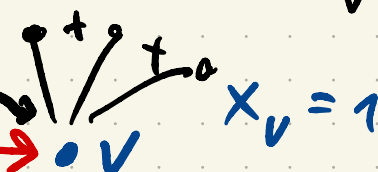
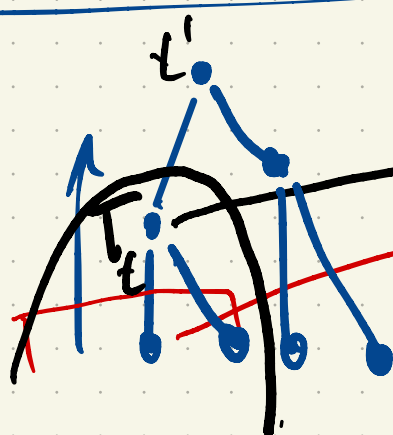
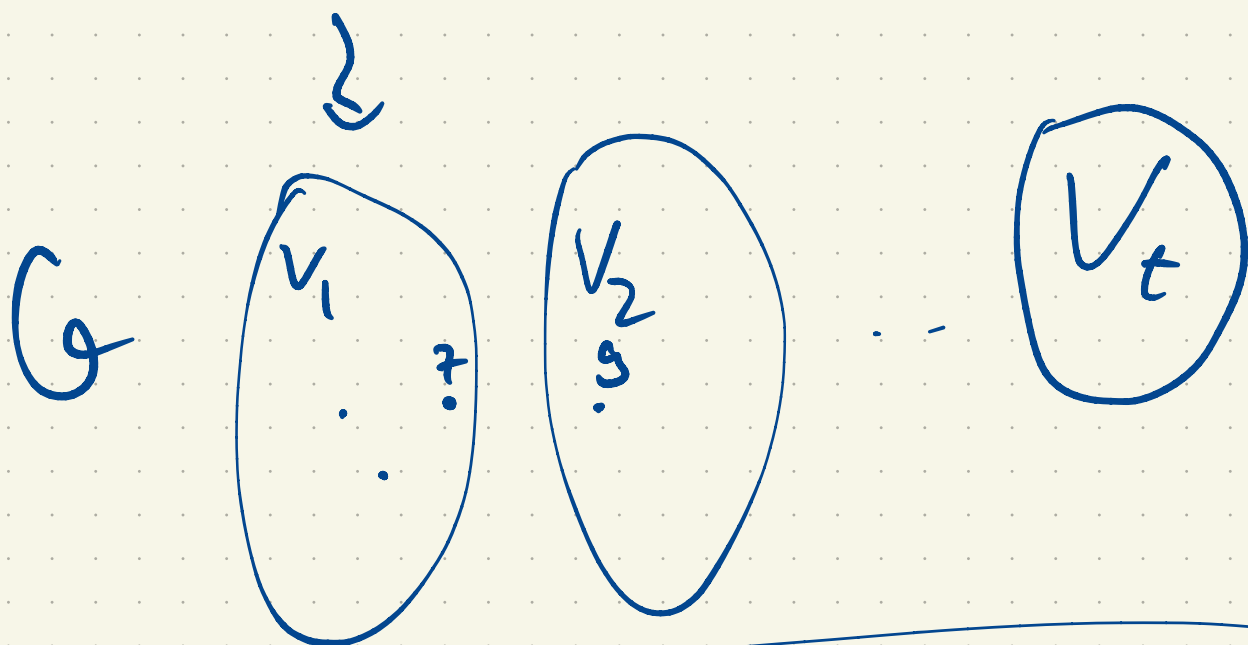
$$x_v = 1 \quad \forall v \in V$$

Repeat n times:

$$x_v = \left(\sum_{u \in N_v} x_u \right)^{\frac{1}{q}} \text{ mod } p \text{ in parallel } (\forall v \in V)$$

random prime

Farben anhand von x_v .



$$x_v = \text{hom}(T_t \rightarrow G \mid t \mapsto v)$$