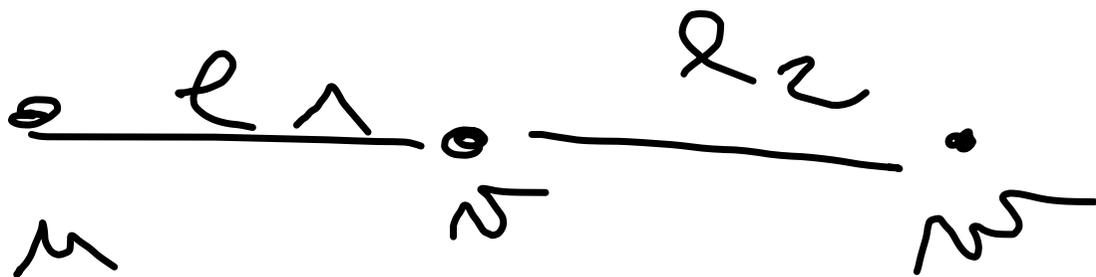


Odpověď: $n=6$

E edge
V vertex

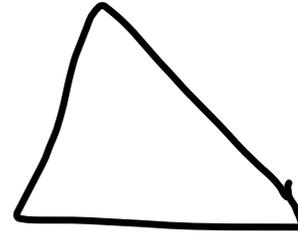
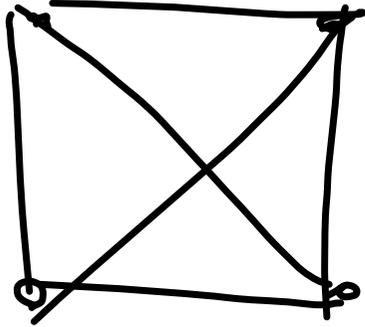


$$e_1 = \{u, v\}$$

$$e_2 = \{v, w\}$$

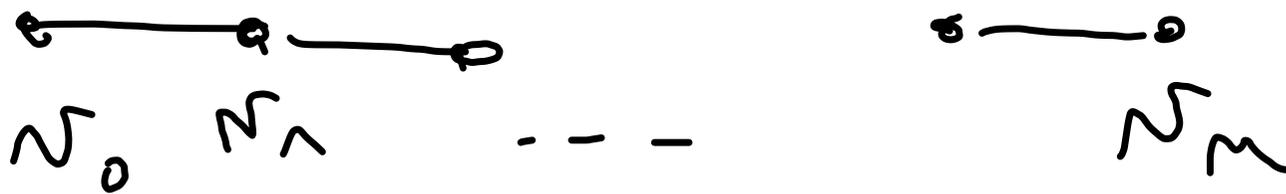
$$E = \begin{pmatrix} \vee \\ 2 \end{pmatrix}$$

$$|E| = \begin{pmatrix} 1 & \vee & 1 \\ 2 \end{pmatrix}$$



$\begin{pmatrix} 1 \\ 2 \end{pmatrix}$ bran

cesta de lly μ



$\sigma_0 = \sigma_1 \Rightarrow$ businice

$$E = \left\{ \left\{ m, n \right\} ; m \in V_1 ; n \in V_2 \right\}$$

$$V_1 \cap V_2 = \emptyset$$

$$V_1 \cup V_2 = V$$

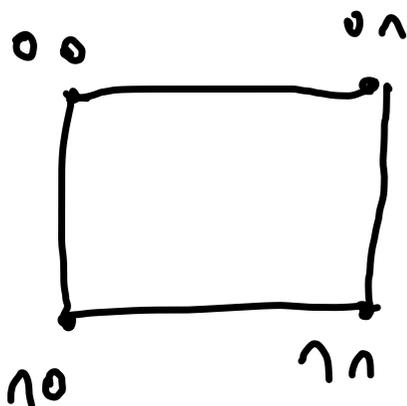
H_0



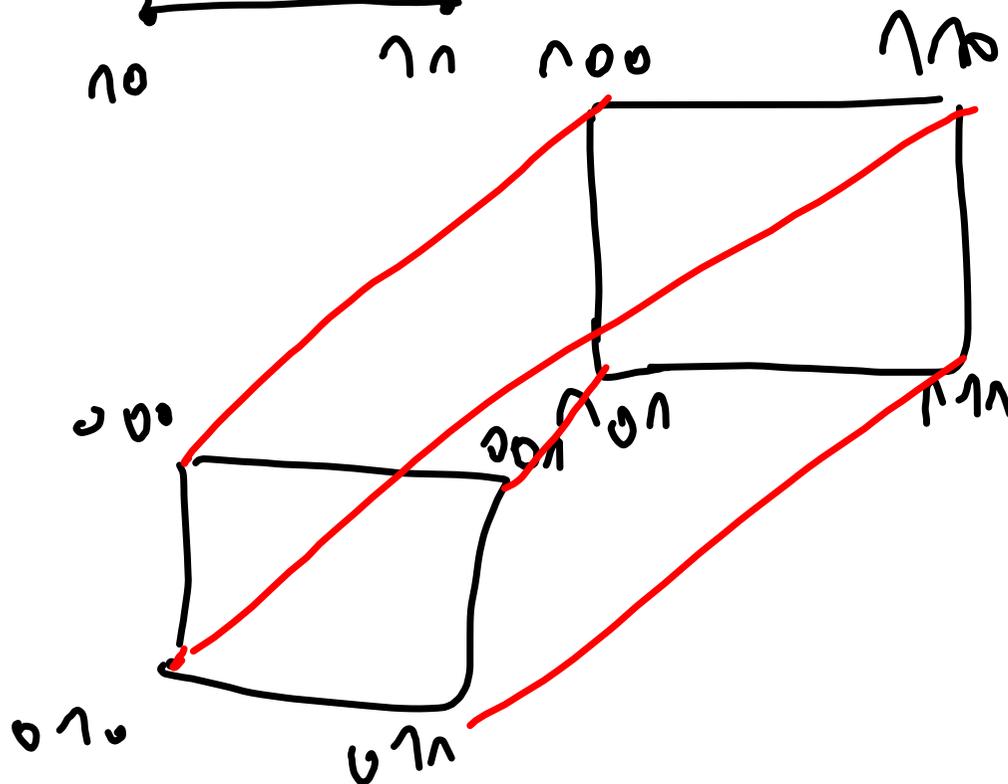
H_1



H_2

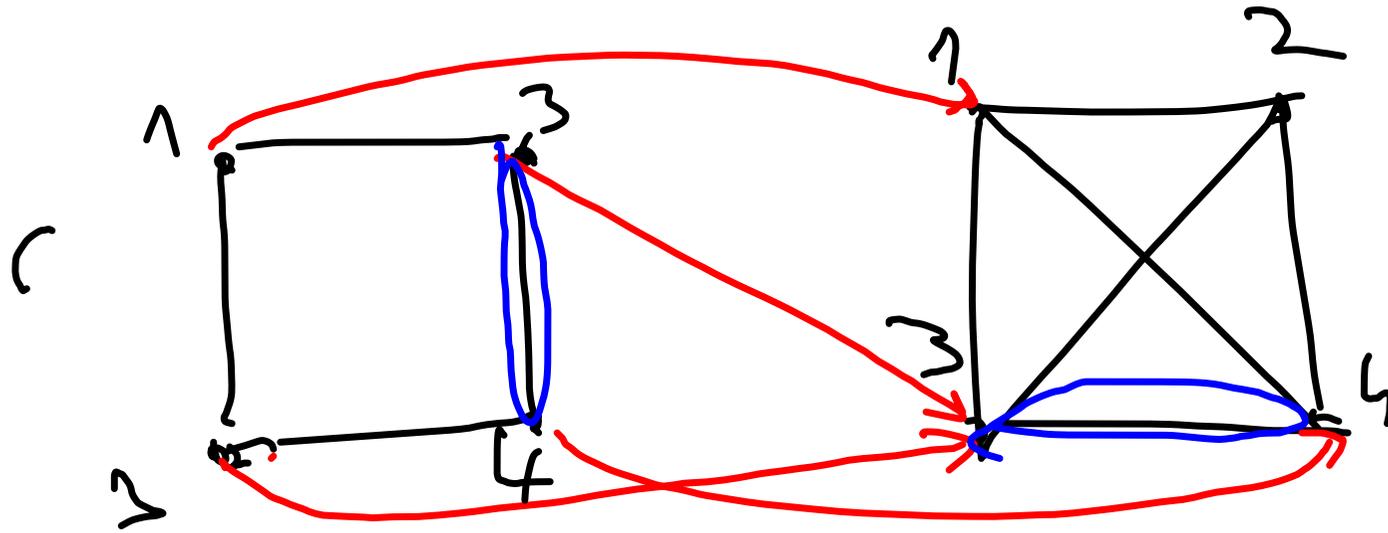


H_3



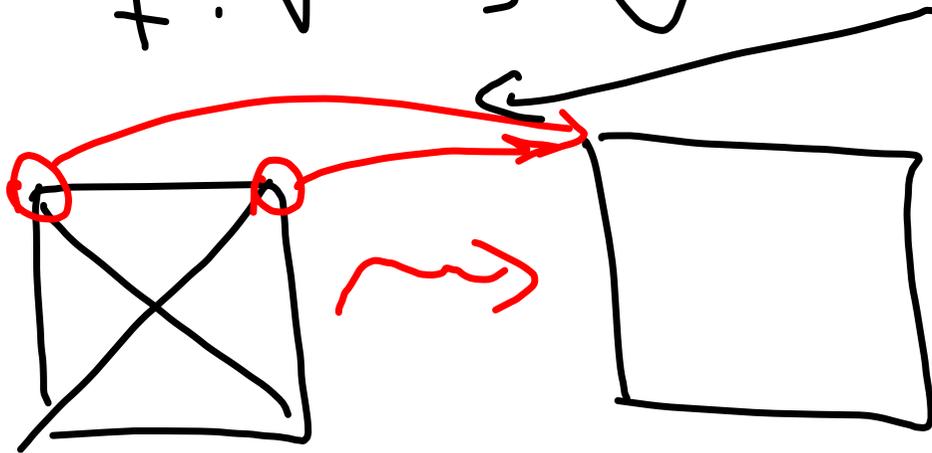
$$G = (V, E)$$

$$G' = (V', E')$$

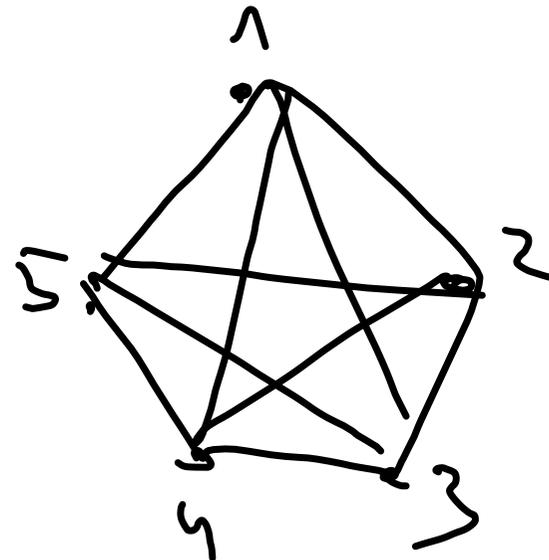
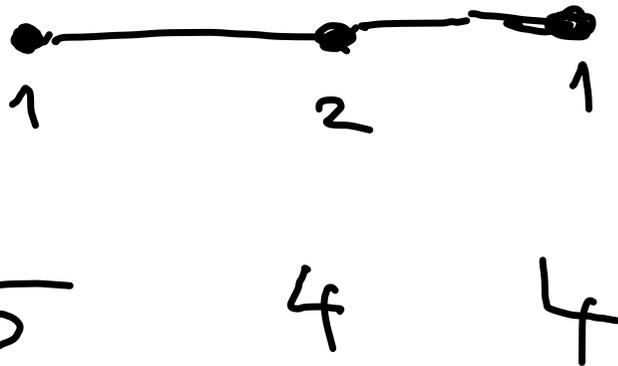


$$f: V \rightarrow V'$$

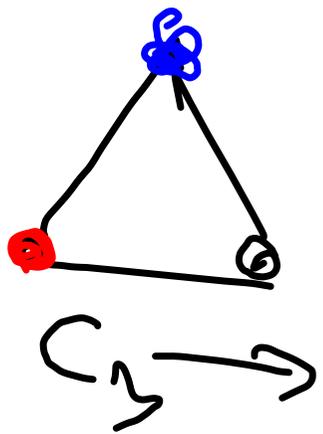
well



Pr:



~ 80 morfizmů $P_2 \rightarrow K_5$



$K_3 \rightarrow K_5$

$5 \cdot 4 \cdot 3 = 60$
morfizmů

izomorfni grafy

$n=1$



1

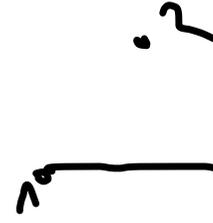
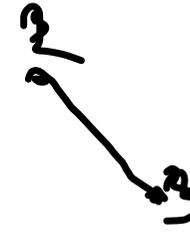
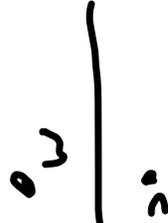
$n=2$



2

$\approx \frac{3}{3!}$

$n=3$



4 $\frac{3!}{2!}$ pp dvou izomorfni grafy na 3 vrchlech

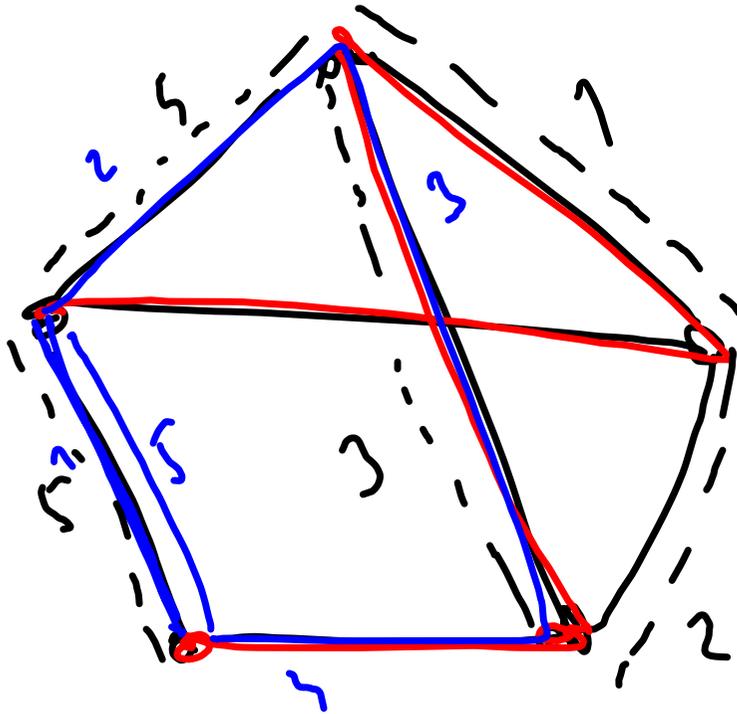
$G \xrightarrow{f} G' \xrightarrow{g} G''$

$G \circ f$

$g \circ$

isomorfismus

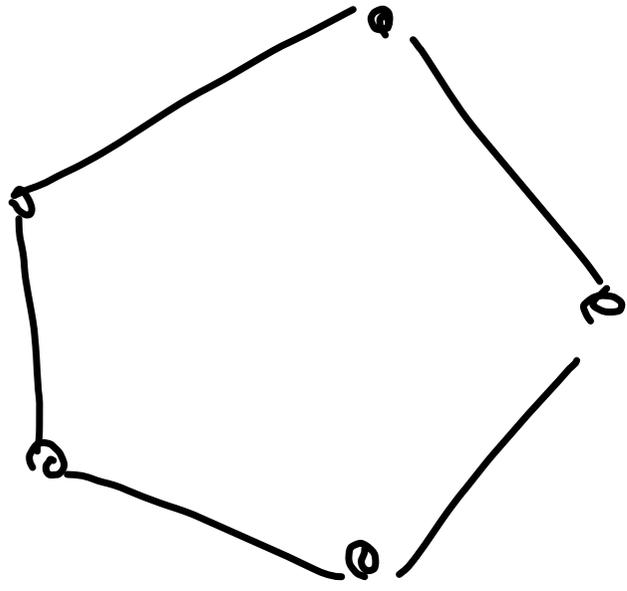
skel
dily 5



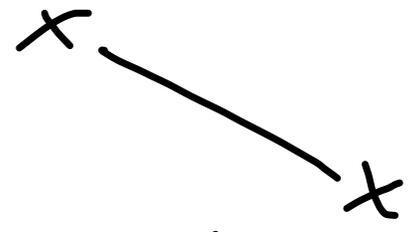
skel dily 5

cesta dily 4





C_5



je podgraf?

není to graf!

$$v_1 \in V$$

$$E \subset \binom{V}{2} \cap E$$

*p. 2 množina všech možných grafů je $k(n)$.

$$k(n) \stackrel{?}{=} \frac{2^{\binom{n}{2}}}{n!}$$

• n vrcholů
 • možných hran $\frac{n(n-1)}{2} = \binom{n}{2}$
 • $2^{\binom{n}{2}}$ možných grafů

• když z nich izomorfních
 $n!$ permutací n-hole

$$\frac{2^{\binom{n}{2}}}{n!}$$

$$f(x) = O(g(x))$$

$$\lim_{x \rightarrow \infty} \frac{f(x)}{g(x)} = 0$$

$$f(x) = \Theta(g(x))$$

$$\lim_{x \rightarrow \infty} \frac{f(x)}{g(x)} = c \in \mathbb{R}, c \neq 0$$

$$\frac{n! \leq n^n}{\binom{n}{2}}$$

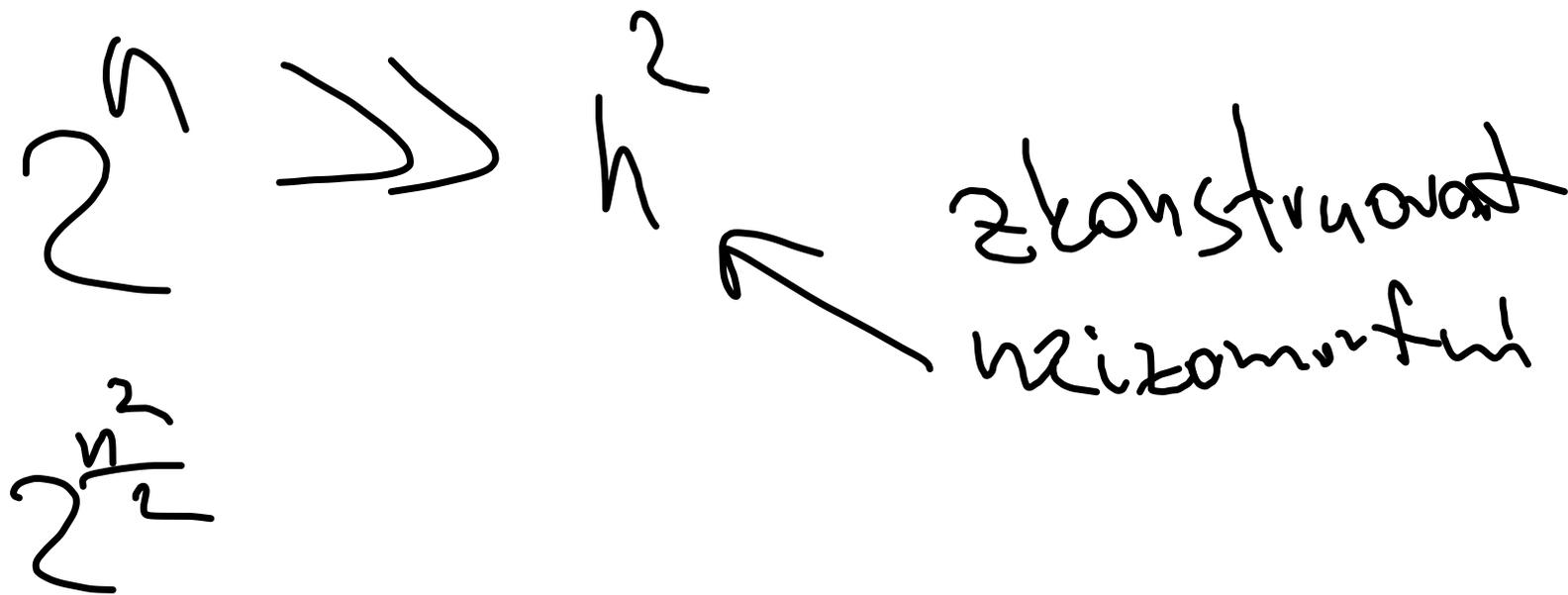
2

$$k(n) \approx \frac{2^{\binom{n}{2}}}{n!}$$

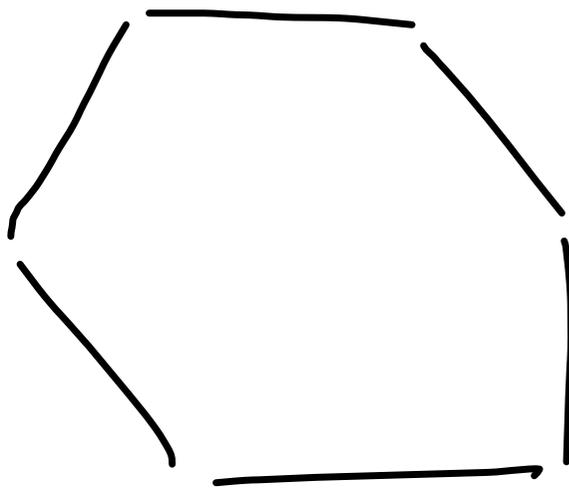
$$\log_2 k(n) \approx \log_2 2^{\binom{n}{2}} - \log_2 n! =$$

$$\approx \binom{n}{2} - n \cdot \log_2 n = \frac{n^2}{2} - \frac{n^2}{2} - n \log_2 n$$

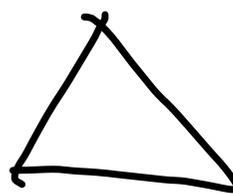
$$\lim_{n \rightarrow \infty} \frac{\log_2 k(n)}{n^2} = \frac{1}{2}$$



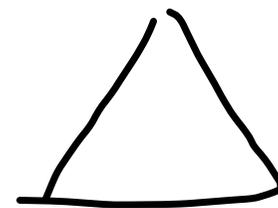
$$\deg r = \left| \left\{ \left\{ m, n \right\} \in E, m \in V \right\} \right|$$



C_6



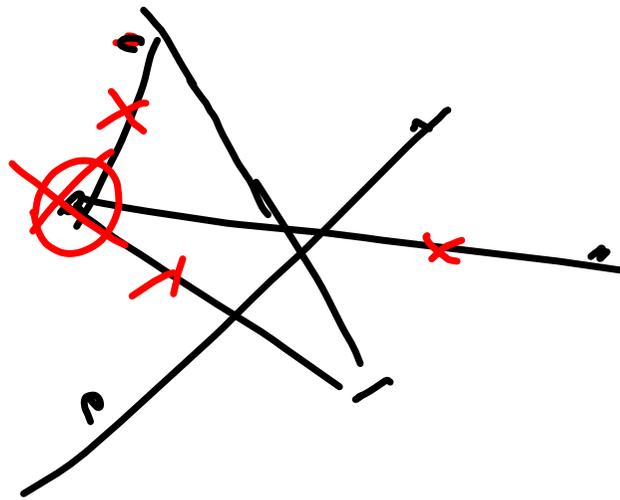
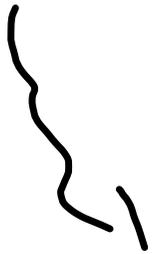
C_3



C_3

shóre (2, 2, 2, 2, 2, 2)

(d_n, \dots, d_n)



\rightarrow 2, 3, 3, 3, 3, 3, 4, ~~5~~ •

2, 3, 2, 2, 2, 2, 3

\rightarrow 2, 2, 2, 2, 2, 3, ~~3~~ •

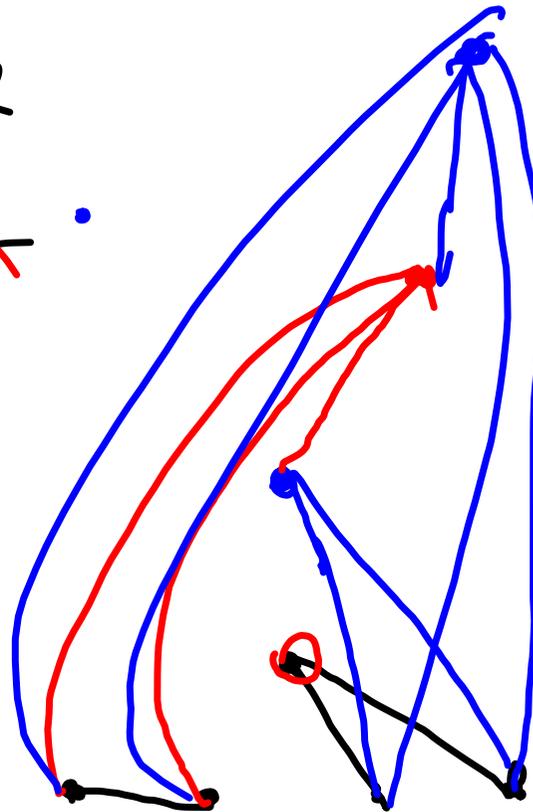
2, 2, 2, 1, 1, 2

1, 1, 2, 2, 2, ~~2~~ •

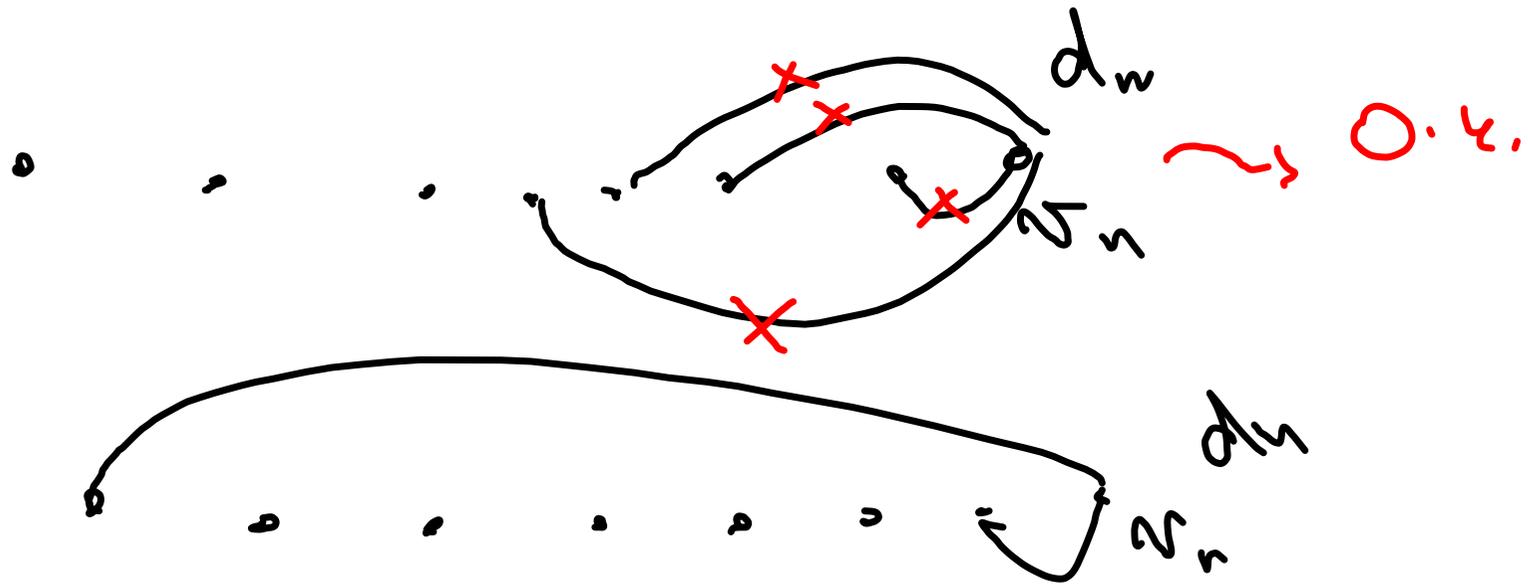
1, 1, 2, 1, 1

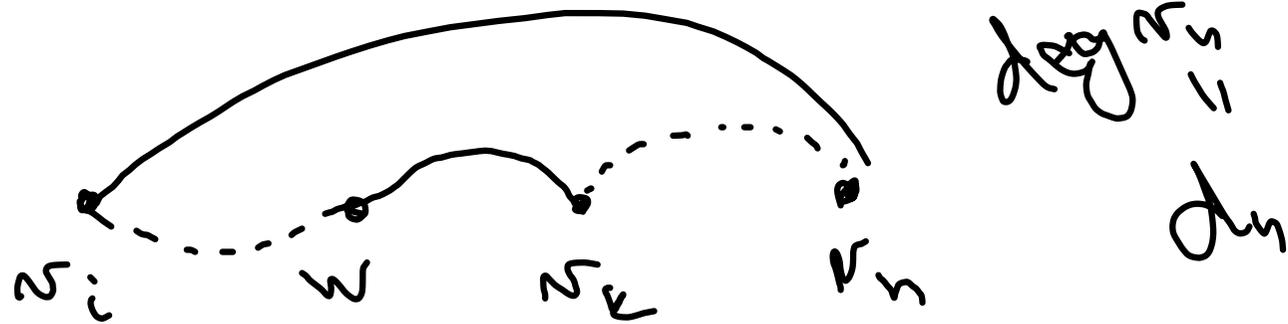
1, 1, 1, 1, ~~2~~ •

1, 1, 0, 0



Dur ex. graf s daným stavem, kdy
 vrchol v_n je spíjen hvězhan prvků
 s posledními d_n vrcholy





ex. v_n mezi posledními d_n
 vrcholy tak, že $\{v_n, v_k\} \notin E$

ex. v_i vzhledem mezi.....

Chci prohledat hrany
 $\deg v_i < \deg v_k \Rightarrow \text{FMS} \rightarrow$

nahradíme
 a