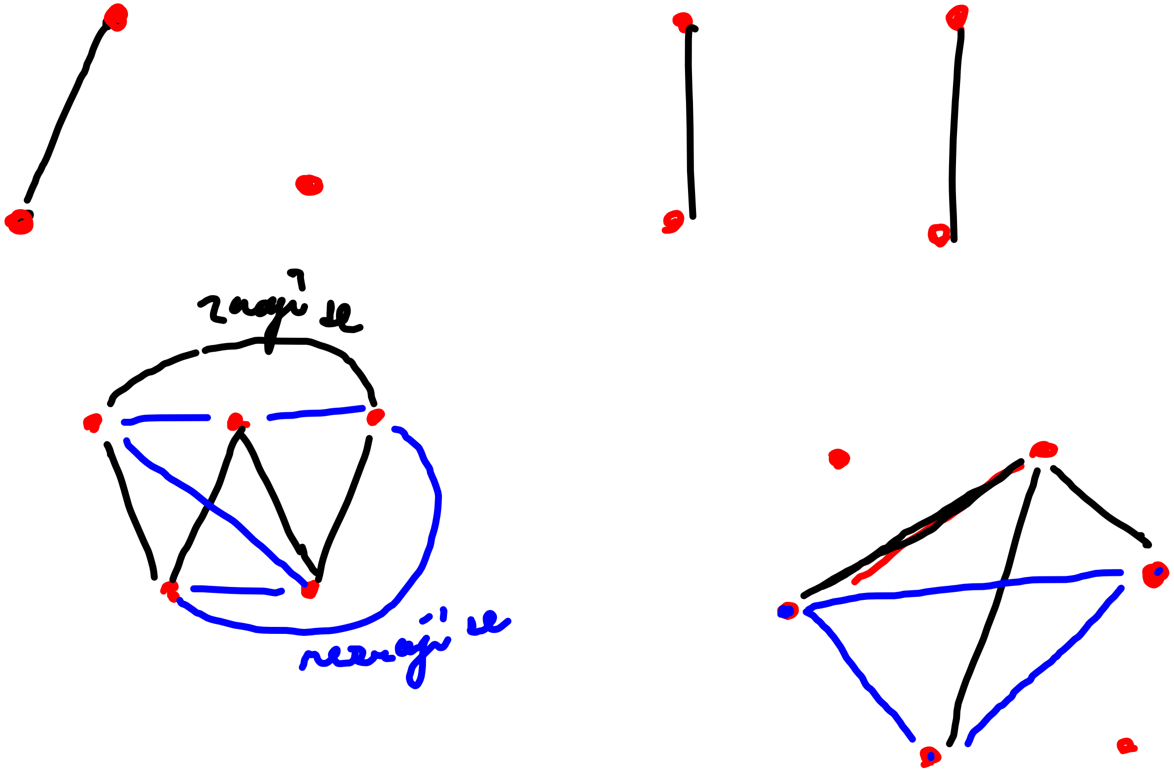
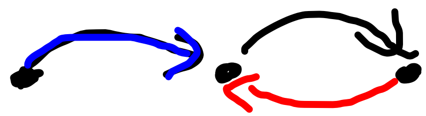

znají se
neznají se

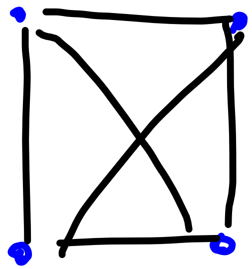
V ... množina

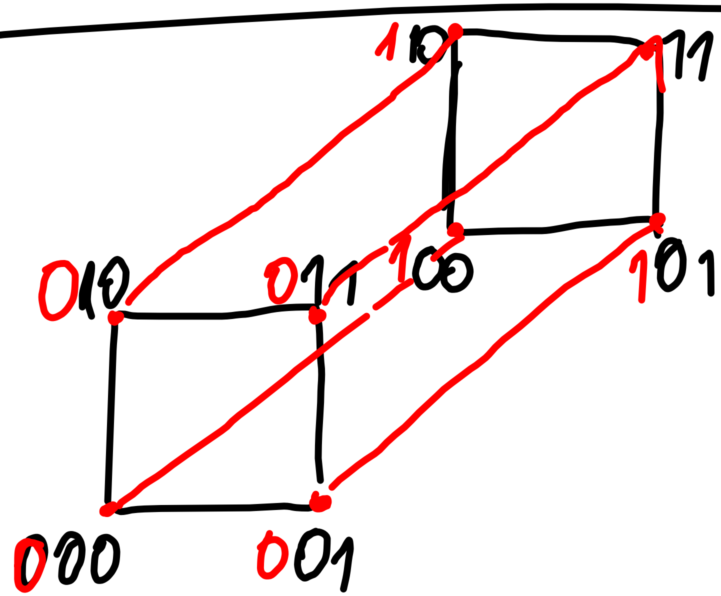
$\binom{|V|}{2}$ ... počet dvouprvkových podmnožin

$\binom{V}{2}$ ... množina dvouprvk. podmn. mn. V



K_4





$f: V \to W$

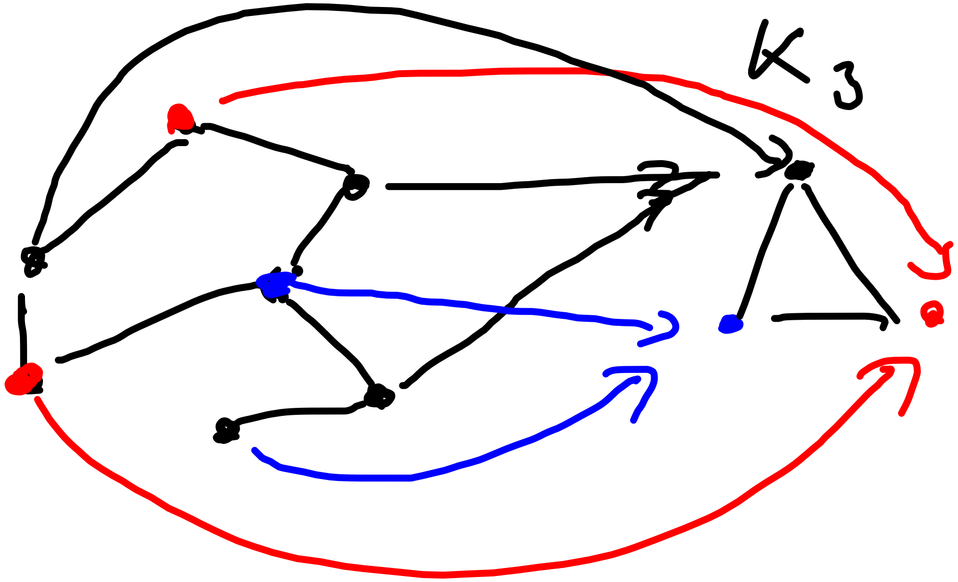
$f(u+v) = f(u) + f(v)$ $\quad u, v \in V$

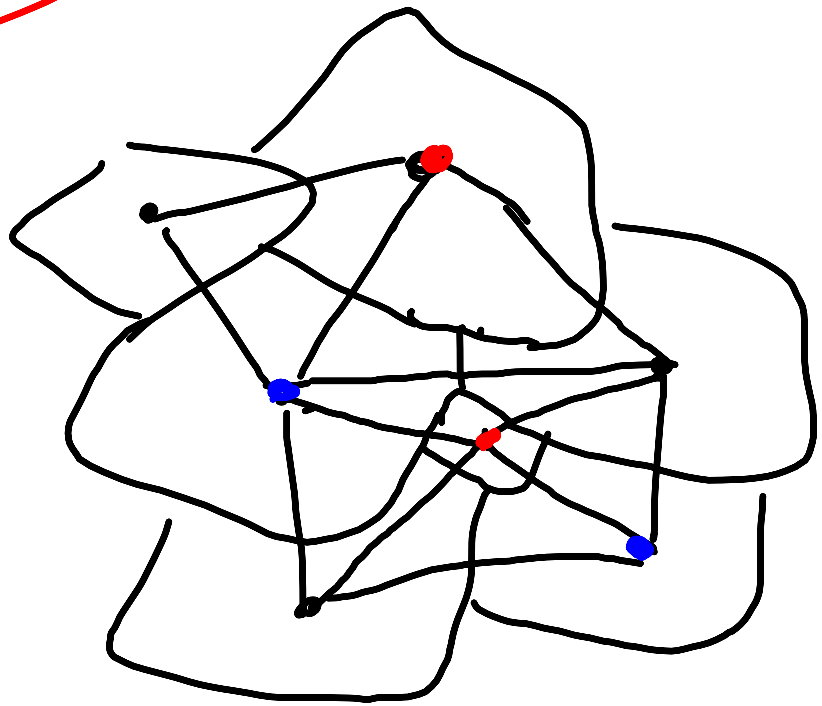
$f(\alpha \cdot v) = \alpha \cdot f(v)$ $\quad \alpha \in \mathbb{F}, v \in V$

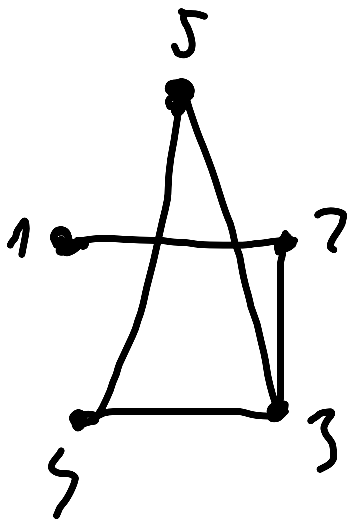
$f_V : V \to V'$ $\qquad f: (V, E) \to (V', E')$

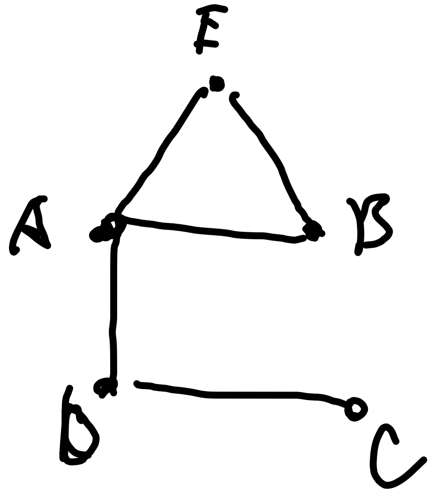
$(v, w) \in E \Rightarrow (f(v), f(w)) \in E'$ - orient. gr.

$\{v, w\} \in E \Rightarrow \{f(v), f(w)\} \in E'$ - neor. gr.


K3







Izomorfismus:

$f(1) = C$

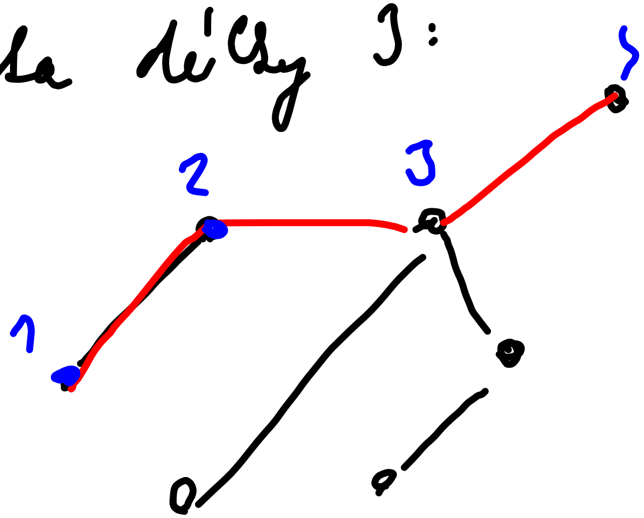
$f(2) = D$

$f(3) = A$

$f(4) = B \quad (E)$

$f(5) = E \quad (B)$

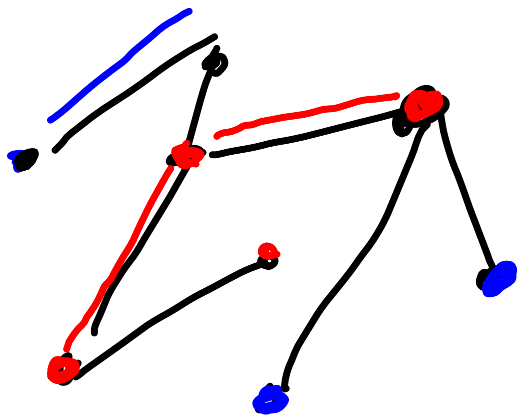
Cesta délky 3:

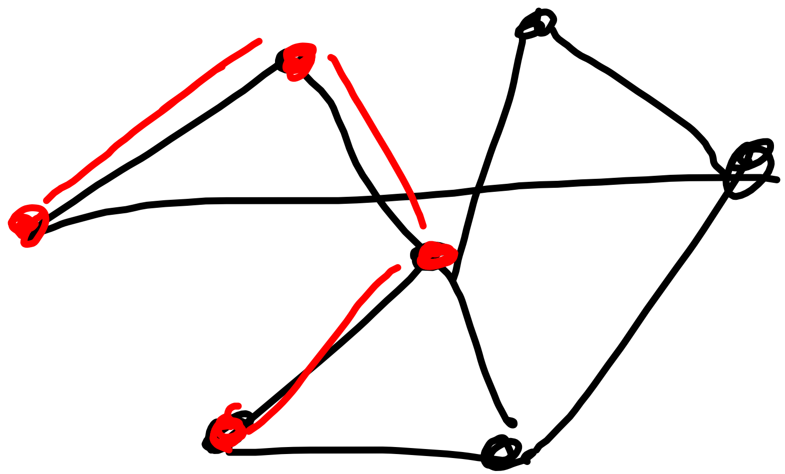


1 2 1 2 3 4

{1,2}, {1,2}, {1,2}, {2,3}, {3,4}

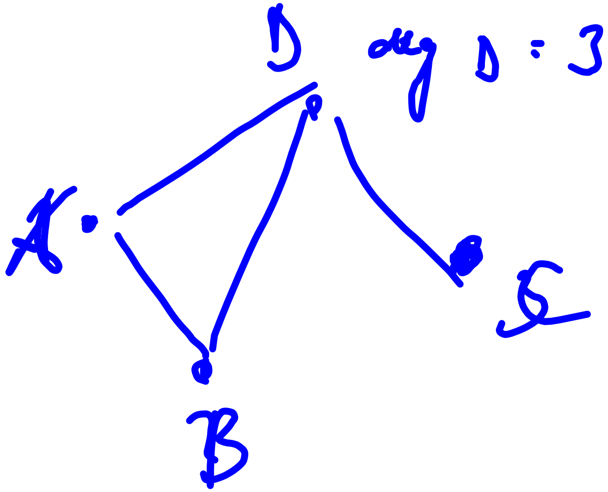
P_n



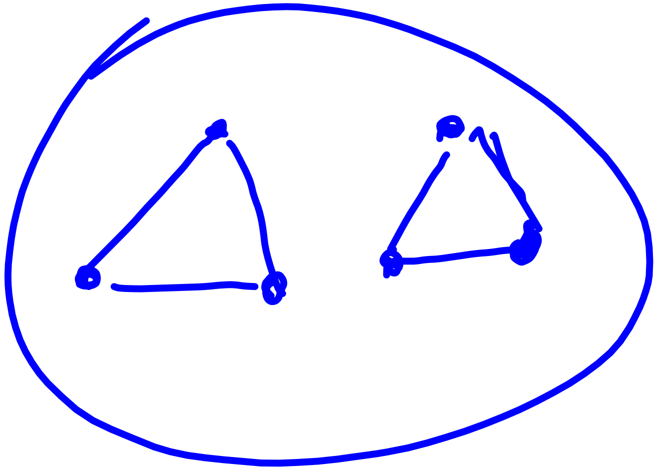


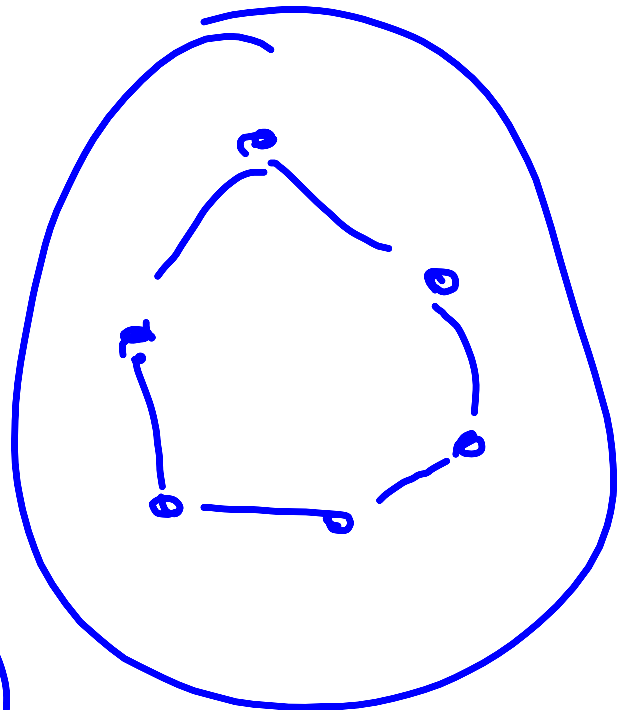
Neizomorfních grafů o n vrcholech je minimálně

$$\boxed{\dfrac{2^{\binom{n}{2}}}{n!}}$$



(7, 1)





(2, 2, 2, 2, 2, 2)

Dk. Nechť existuje graf se skóre

$$(d_1, d_2, \dots, d_{n-d_n}-1, d_{n-d_n+1}-1, \dots, d_{n-1}-1)$$

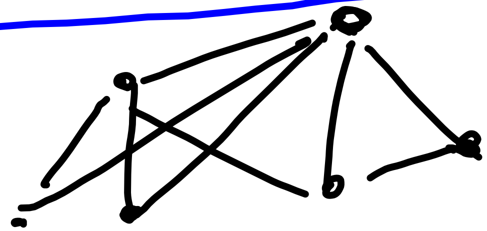
Přidám k němu jeden vrchol a spojím ho s vrcholy se skóre $d_{n-d_n}-1, d_{n-d_n+1}-1,$ $\dots d_{n-1}-1$. Skóre takového grafu bude

$$(d_1, d_2, \dots, d_{n-d_n}, \dots, d_{n-1}, d_n)$$

Obráceně nechť existuje graf se skóre $(d_1, \dots, d_n)$. Vyjmeme z něj vrchol se skóre d_n a všechny hrany z něj vedoucí

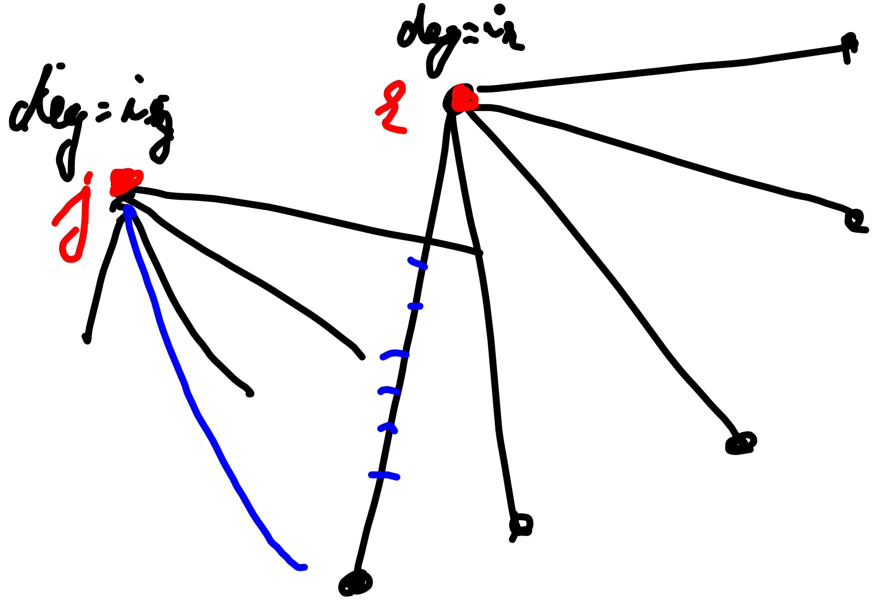
$$\underbrace{(d_1, \dots, d_{i_1}-1, \dots, d_{i_2}-2, \dots, d_{i_{d_n}}-1, \dots)}$$

$$\underbrace{(d_1, d_2, \dots, d_{n-d_n-1}, d_{n-d_n}-1, \dots)}$$



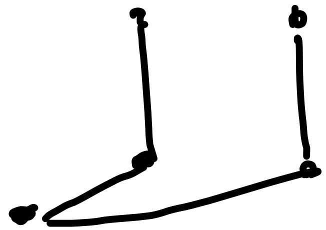
Lemma.

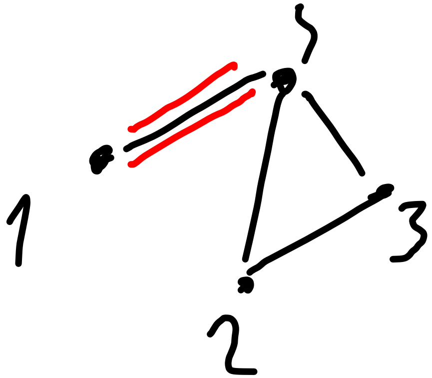
Existuje-li graf se skóre $(i_1, i_2, \dots, i_n)$, kde $i_j < i_k$, pak existuje graf se skóre $(i_1, \dots, i_j+1, \dots, i_k-1)$



ex. $(2,2,2,1,1) \Leftarrow (1,1,1,1)$

ex.





$$\begin{pmatrix} 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 1 \\ 0 & 1 & 0 & 1 \\ 1 & 1 & 1 & 0 \end{pmatrix}$$

$$\begin{pmatrix} 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 1 \\ 0 & 1 & 0 & 1 \\ 1 & 1 & 1 & 0 \end{pmatrix} \begin{pmatrix} 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 1 \\ 0 & 1 & 0 & 1 \\ 1 & 1 & 1 & 0 \end{pmatrix} = \begin{pmatrix} 1 & & & \\ & & & \\ & & & \\ & & & \end{pmatrix}$$