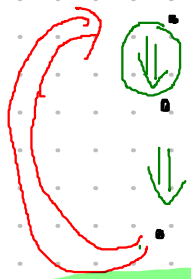


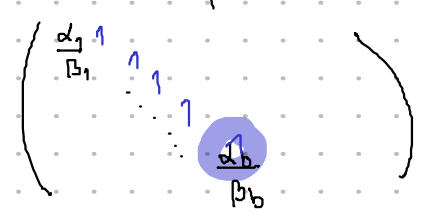
VĚTA NPJE:

G racionální matice



$\alpha_b = 1$

G má poly pravý inverz ($\alpha D, D^{-1}$)



μG poly \Rightarrow μ poly

UVAŽEME
 $\alpha_b \neq 1 \Rightarrow$ najdeme μ ...
 μG poly
 $\alpha \mu$ nel poly

$G \cdot G' = \begin{pmatrix} 1 & \\ & 1 \end{pmatrix}$

$G = (A \cdot \Gamma \cdot B)$
 $G' = B^{-1} \cdot \Gamma^{-1} \cdot A^{-1}$



G racionální

Smithova forma

$q \cdot G$ polynomiální

$qG = A \cdot \Gamma \cdot B$

$\Gamma = \begin{pmatrix} \alpha_1 & & \\ & \dots & \\ & & \alpha_b & 0 \\ & & & \dots & 0 \end{pmatrix}$

$G = A \cdot \frac{\Gamma}{q} \cdot B$

$\frac{\alpha_i}{q}$ káždě
 $= \frac{\alpha_i}{\beta_i}$ $\alpha_i | \alpha_{i+1}$
 $\beta_i | \beta_{i+1}$

$G = A \cdot \begin{pmatrix} \frac{\alpha_1}{\beta_1} & & \\ & \dots & \\ & & \frac{\alpha_b}{\beta_b} & 0 \\ & & & \dots & 0 \end{pmatrix} \cdot B$

$(0, \dots, 0, \frac{\beta_b}{\alpha_b}) \cdot \Gamma = (0, \dots, 0, 1, 0, \dots, 0)$

μG

$\mu = \frac{\beta_b}{\alpha_b} e_b \cdot A^{-1} \cdot (A \Gamma B) = \beta_b$ poly

$\mu \cdot A = \frac{\beta_b}{\alpha_b} e_b \Rightarrow \mu$ nel polynom □

$\alpha_b \neq 1$
 $\alpha_b \neq D^b$

$\frac{\beta_b}{\alpha_b} = \frac{p}{q} = \dots$
 $\frac{1}{1+D} = 1 - \dots$

$\frac{1}{D^k} = D^{-k}$

$F[D, D^{-1}]$

F inv.
 D, D^{-1}
 $p \neq D, D^{-1}, a_0 \cdot D^0$