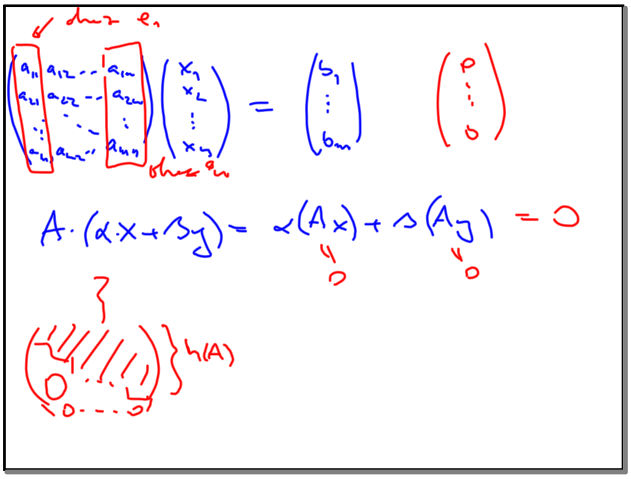
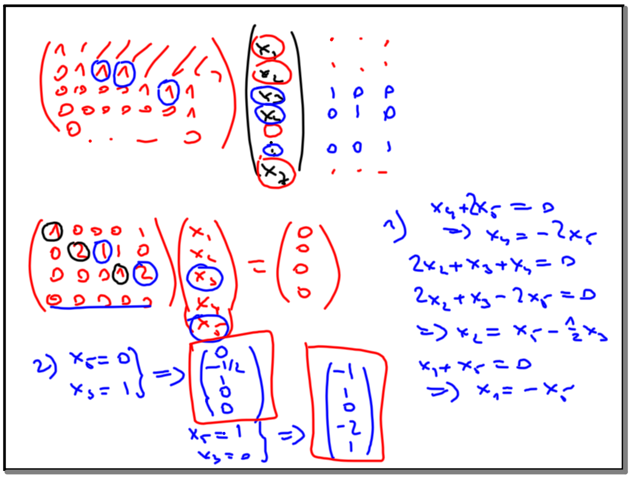
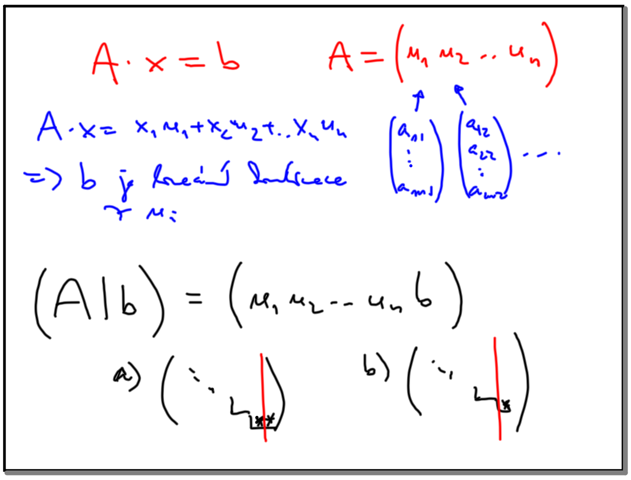


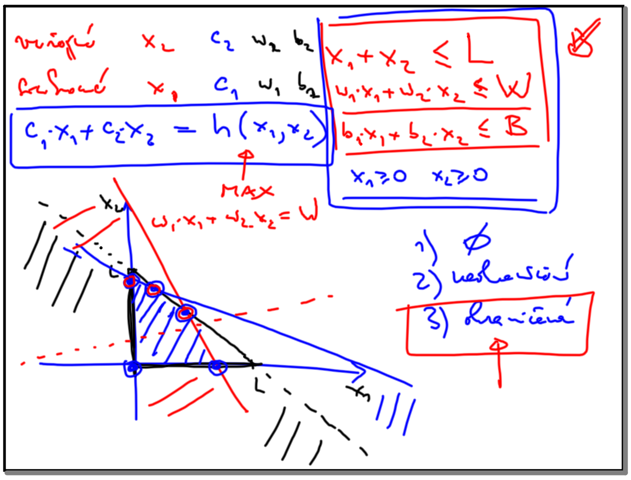
11 5-16:06



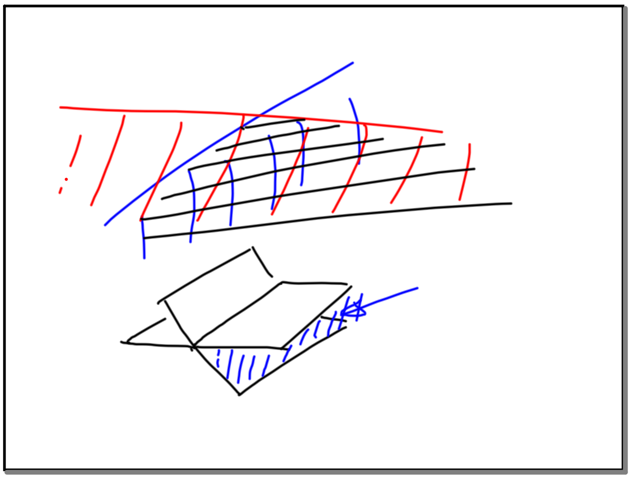
11 5-16:20



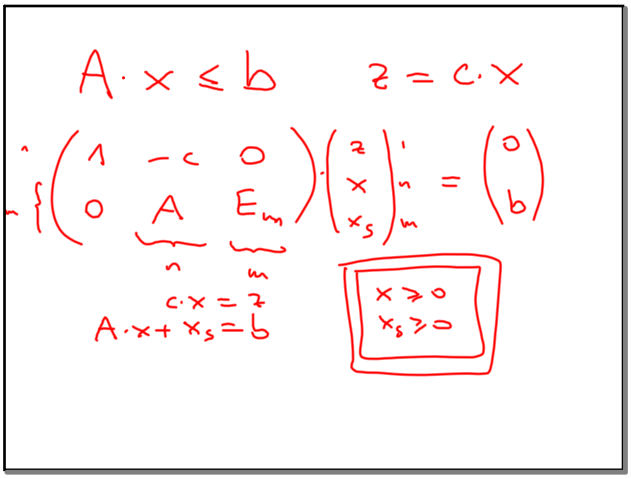
11 5-16:31



11 5-16:49



11 5-17:04



11 5-17:07

Definice a vlastní čísla:

$\varphi : V \to V \qquad \varphi(u) = \alpha \cdot u$

$A : x \mapsto A \cdot x \qquad (A - \alpha E) \cdot x = 0$

$|A - \lambda E| = 0 \Rightarrow \lambda =$ vlastní číslo

$\dim V = n \quad \lambda_1, \dots, \lambda_n$ různá vlastní čísla

$\Rightarrow \exists\, u_1, \dots, u_n$ báze V, ve které je matice

$$\tilde{A} = \begin{pmatrix} \lambda_1 & & 0 \\ & \ddots & \\ 0 & & \lambda_n \end{pmatrix}$$

11 5-17:34

$\lambda_{1,2} = a \pm i b \qquad \mathbb{R}^n \subset \mathbb{C}^n$

$x \mapsto A \cdot x$

$$\begin{pmatrix} 0 & 1 & & \\ & 0 & 2 & \\ & & 0 \ddots & n \\ & & & 0 \end{pmatrix}$$

$(a_n x^n + \dots + a_0)' = n a_n x^{n-1} + \dots + a_1 + 0$

$x^n \mapsto n \cdot x^{n-1} \mapsto n(n-1) x^{n-2} \mapsto \dots \; 0$

$$\det \begin{pmatrix} -\lambda & 1 & & \\ & -\lambda & 2 & \\ & & \ddots & n \\ & & & -\lambda \end{pmatrix} = (-1)^{n+1} \cdot \lambda^{n+1}$$

$(\varphi - \lambda_i \, id)|_{V_i}$

11 5-17:39