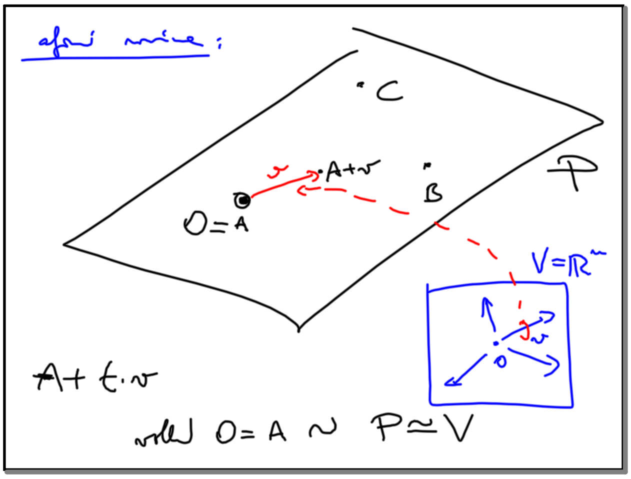
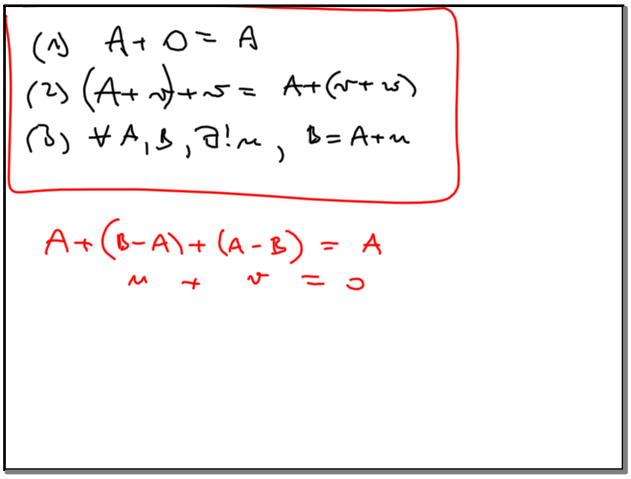
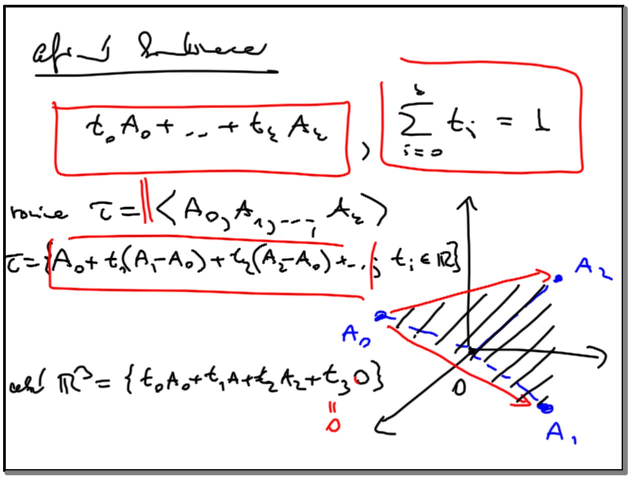


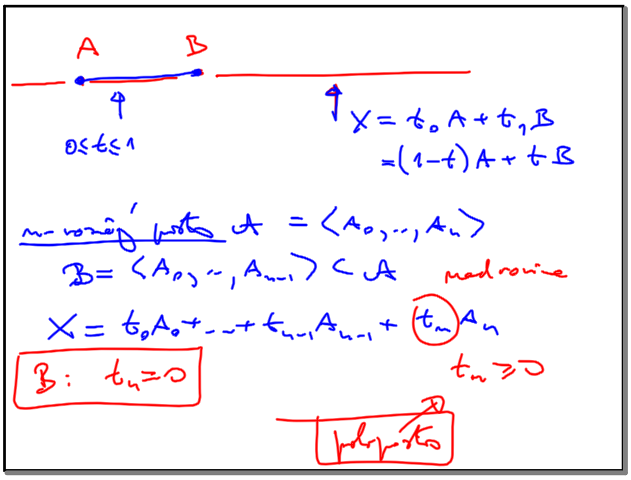
11 28-10:01



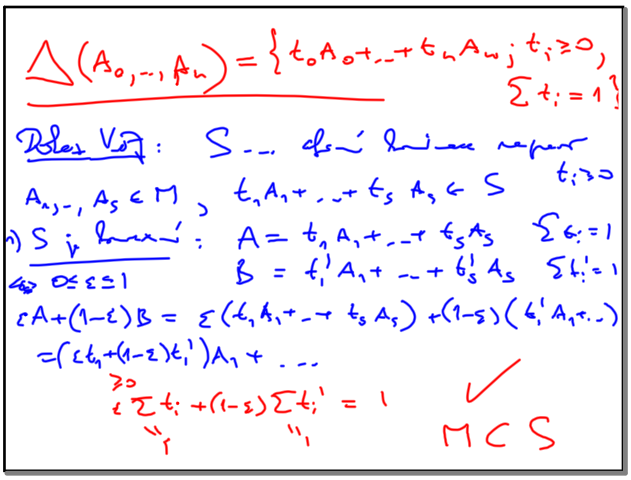
11 28-10:20



11 28-10:31



11 28-10:34



11 28-10:39

11 28-10:42

Souvislost s lin. programováním:

$\varphi, \alpha_1, \dots, \alpha_k \in V^*$ $\qquad \alpha_i = (a_{i1}, \dots, a_{in})$

$x = (x_1, \dots, x_n)^T$

$\alpha_i(x) = \alpha_i \cdot x$

$$\boxed{\begin{array}{l} \alpha_i(x) \le b_i \quad i = 1, \dots, m \\ \varphi(x) \ \max \end{array}}$$

$\longleftrightarrow$ x splňující tyto lin. podmínky

$\alpha_i(x) = b_i \longrightarrow$ nadrovina

$\boxed{\alpha_i(x) \le b_i} \longrightarrow$ poloprostor tj. konvexní

$\varphi(x + tu) = \varphi(x) + t\,\varphi(u)$, $\varphi(u) \ge 0$

11 28-10:56

Věta $f: A \to B$ afinní $\iff$ zachovává afinní kombinace:

$f(A_0) + t_1 \varphi(u_1) + \dots$

$u = t_1(A_1 - A_0) + t_2(A_2 - A_0) + \dots$

$f(t_0A_0 + \dots + t_sA_s) = \boxed{f(A_0 + t_1(A_1 - A_0) + \dots +)}$

$= f(A_0) + \varphi(t_1(A_1 - A_0) + \dots + t_s(A_s - A_0))$

$= \boxed{f(A_0) + t_1\varphi(A_1 - A_0) + \dots + t_s\varphi(A_s - A_0)}$

$= f(A_0 + t_1(A_1 - A_0))$

$= t_0 f(A_0) + t_1 f(A_1) + \dots + t_s f(A_s)$

Důsl.: $f(A_0 + t_1(A_1 - A_0)) = f(A_0) + t_1\varphi(A_1 - A_0)$

$$\boxed{\boxed{\varphi(A_1 - A_0) = f(A_1) - f(A_0)}}$$

11 28-11:12

Naopak: vyberme afinní repér $(A_0, u_1, \dots, u_n)$ v A, tj. musí být

$A_0,\ A_1 = A_0 + u_1,\ \dots,\ A_n = A_0 + u_n$

$$\boxed{f(A_1) =: \varphi(u_1),\ f(A_2) =: \varphi(u_2),\ \dots}$$

$-f(A_0) \qquad -f(A_0)$

$(t_0A_0 + t_1A_1) \overset{f}{\longmapsto} t_0 f(A_0) + t_1 f(A_1)$ určuje φ

$f(\underbrace{A_0 + tu_1}_{A_1}) = f(A_0) + \varphi(u_1)$

11 28-11:21

Důsledek $f: A \to B$ afinní

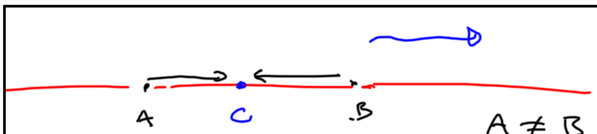
$\iff f(tA + (1-t)B) = t f(A) + (1-t) f(B)$

$(t_0A_0 + \dots + t_{n-1}A_{n-1}) + t_nA_n \qquad t_0, \dots, t_{n-1} \ne 0$

$= r(t'_0A_0 + \dots + t'_{n-1}A_{n-1}) + s\,A_n \qquad \sum_{i=0}^{n-1} t'_i = 1$

$(\ t_i = r \cdot t'_i\ ) \qquad r + s = 1$

11 28-11:31



$A \ne B$

$C = rA + sB \qquad r + s = 1$

$= A + \underbrace{s(B - A)}_{\boxed{C - A}} = B + \underbrace{r(A - B)}_{\boxed{C - B}}$

$-\frac{s}{r} =: \lambda \qquad (= (C; A, B))$

11 28-11:37