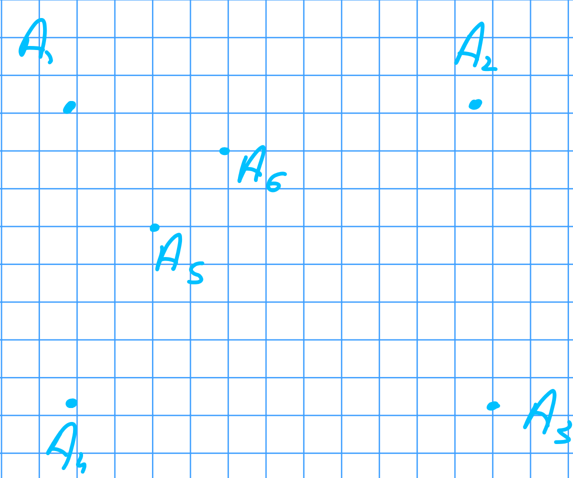
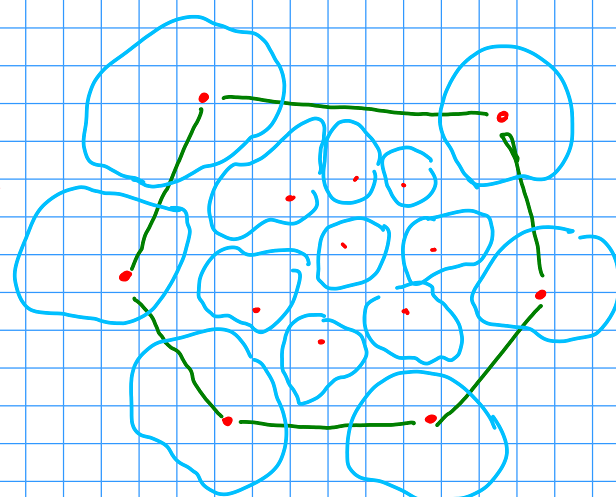
Seminar 7

Ex 1



Ex 2

A



$$\left.\begin{aligned} & n_v \leq 2n-5 \\ & f = n \\ & v = n_v + 1 \\ & m = n_m \end{aligned}\right\} \quad \begin{aligned} & v-1 \leq 2f-5 \\ & \boxed{v \leq 2f-4} \end{aligned}$$

$n_m \le 3n-6$

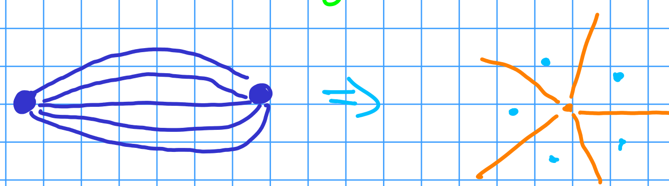
$\Leftrightarrow$

$m \le 3f-6$ ✓ (din S6)

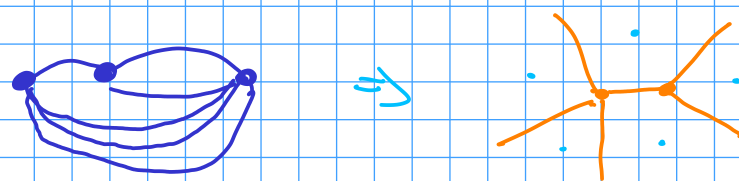
B

Ne uităm la grafuri planare cu un vârf „la infinit" de grad 5, și 5 fețe, toate nodurile au grad ≥ 3.

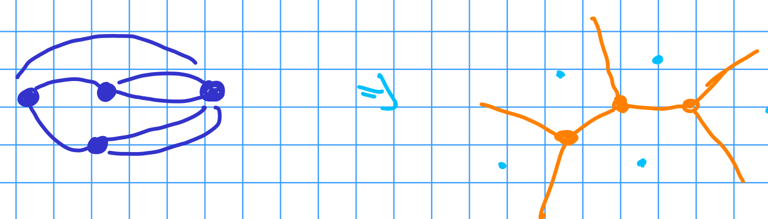
I



II

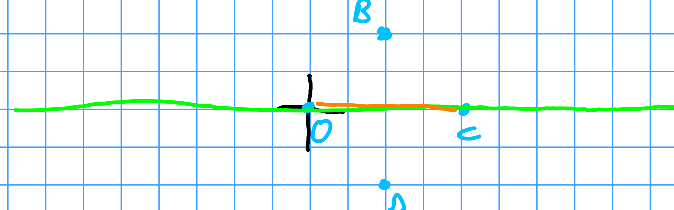


III



Nu se atinge $n_v = 2n-5$ în niciuna din situații

3



I $\alpha \le 0 \Rightarrow$ Inf. conv $= \{A, B, C, D\}$

$\Rightarrow$ 4 semidrepte

II $0 < \alpha < 2 \Rightarrow$ Inf. Conv $= \{O, B, C, D\}$

III $\alpha > 2 \Rightarrow$ I.C. $= \{O, B, A, D\}$

4 Recapitulare planul dual

$$P \xrightarrow{f} P^*$$

$$A = \binom{A_x}{A_y} \Rightarrow f(A) = A^*: y = A_x \cdot x - A_y$$

$$d: y = ax + b \Rightarrow f(d) = d^* = \binom{a}{-b}$$

<u>obs</u> $f = f^{-1} \Leftrightarrow f^2 = 1$

$$f \circ f\left(\binom{a}{b}\right) = f\left(f\left(\binom{a}{b}\right)\right) =$$

$$= f(d: y = ax - b) = \binom{a}{b}$$

Fie un punct $A(\alpha, \beta)$ şi o dreaptă $d: y = ax + b$ a.î. $A \in d$

$$\beta = a\alpha + b$$

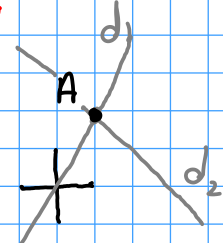
$$A^*: y = \alpha x - \beta$$

$$d^* = \binom{a}{-b}$$

Este d^* pe A^*?

$$-b = a\alpha - \beta \Leftrightarrow \beta = a\alpha + b$$

A / i



$A(1,2)$

$d_1: y = 2x$

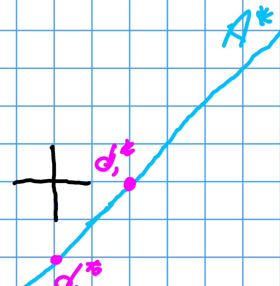
$d_2: y = -x + 3$

$$\Downarrow *$$

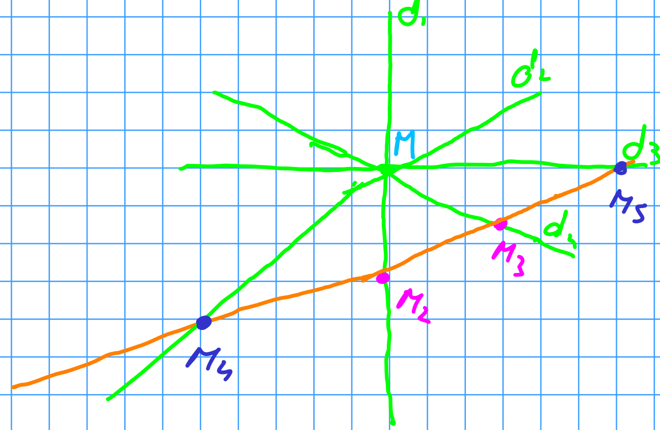
$A^*: y = x - 2$

$d_1^*(2, 0)$

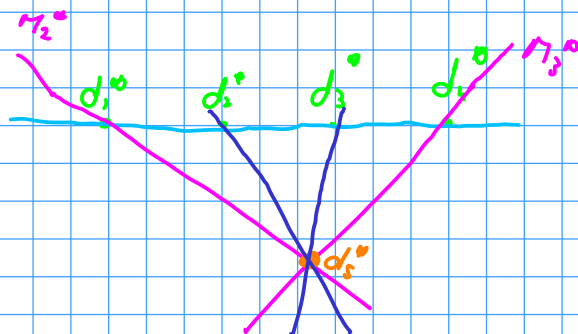
$d_2^*(-1, -3)$



ii



ii

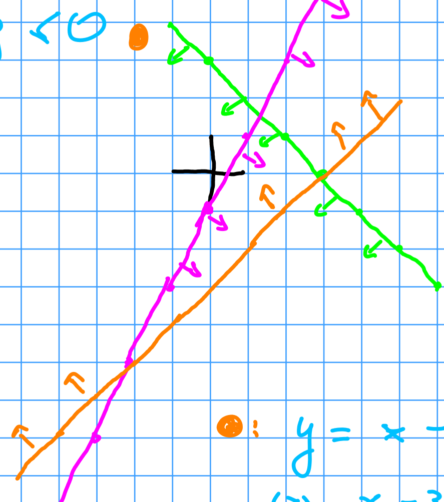


5

$H : x + y - 3 \leq 0$

$H' : -2x + y + 1 \leq 0$

$x - 3y \leq 0$



$y = x - 3$

$\Leftrightarrow x - 3 - y = 0$

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