

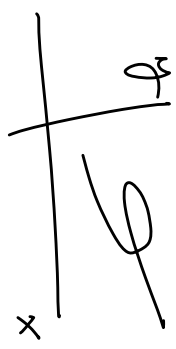
2PG-9

Note Title

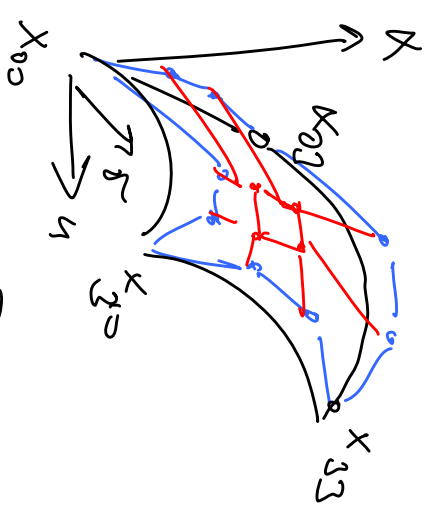
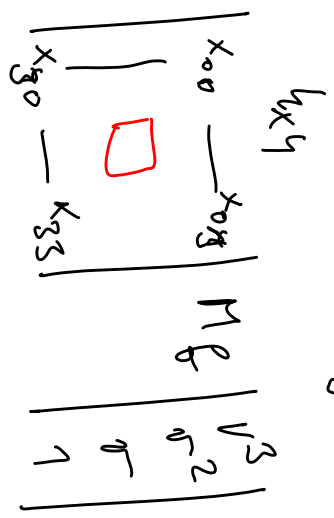
28.11.2008

$$x(t) = [x_0, x_1, x_2, x_3]^T M_f [t^3, t^2, t, 1]^T \quad \left. \begin{matrix} e_2 \\ e_3 \end{matrix} \right\}$$

$$y(t) = x^T M_g t$$



$$x(u, \tau) = [u^3, u^2, u, 1]^T M_f^T$$



$$x(u, \tau) = u^T M_f^T x M_f v$$

$$y(u, \tau) = u^T M_f^T v M_g v$$

$$z(u, \tau) = u^T M_f^T z M_g v$$

\Rightarrow pack program mit ?!

GPM/KMA

Kurzweil

$$X \equiv [R, \vec{p}]^T$$

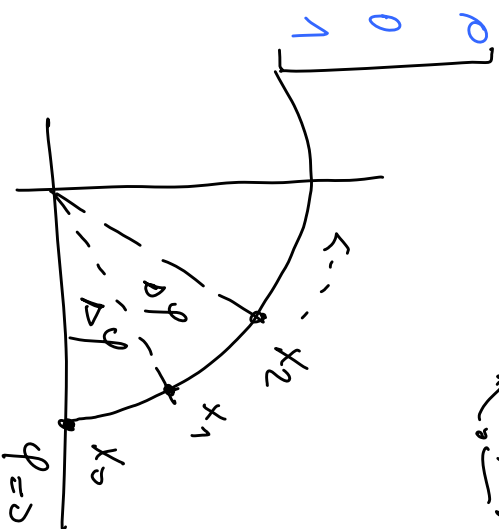
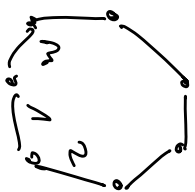
$$R = \begin{bmatrix} \cos \Delta\varphi & -\sin \Delta\varphi & 0 \\ \sin \Delta\varphi & \cos \Delta\varphi & 0 \\ 0 & 0 & 1 \end{bmatrix}$$

$$x'_i = R x_i$$

for $i=1$ to n

$$\{ \boxed{x_i = R x'_i} \}$$

GRAFIT (*)



- (1) $x = x \cos \Delta\varphi - y \sin \Delta\varphi$
- (2) $y = x \sin \Delta\varphi + y \cos \Delta\varphi$

$\sin \Delta\varphi, \cos \Delta\varphi$ -- Kurzweil!

$$x = r \cdot \cos \varphi$$

$$y = r \cdot \sin \varphi$$

$$\varphi \in [0, 2\pi)$$

$$\Delta\varphi = \frac{2\pi}{n}$$

-- počet
-- kusku

MoveTo(0,0); $\varphi=0$

for $i=1$ to n $\varphi = \varphi + \Delta\varphi$

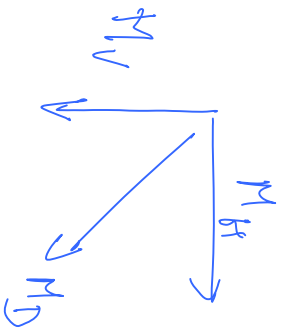
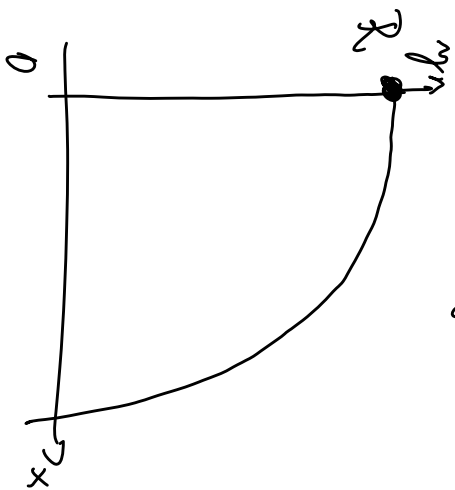
$$\{ x = r \cos \varphi$$

$$y = r \sin \varphi \}$$

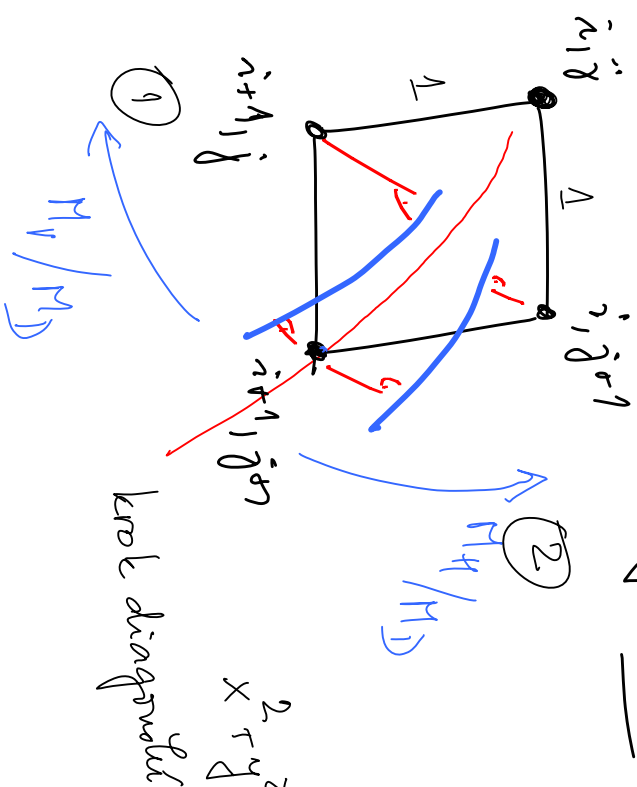
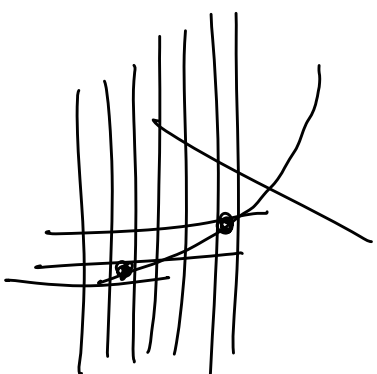
GRAFIT (*)

}

Bresenham's algorithm - kurvisse



$$y = \sqrt{R^2 - x^2}$$



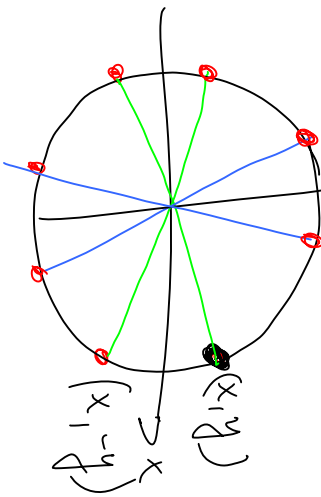
$$x^2 + y^2 - R^2 = 0$$

- ① k k k k $(i+1, j) \xrightarrow{+} M_H$
 $\xrightarrow{-} M_D$
 - ② k k k k $(i, j+1) \xrightarrow{+} M_H$
 $\xrightarrow{-} M_D$
- operace
s integer
± *2
skl 1

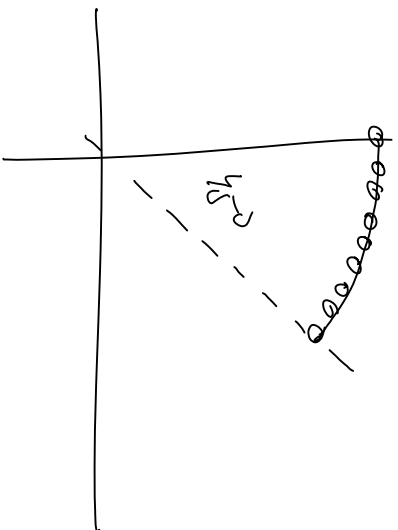
Ellipse



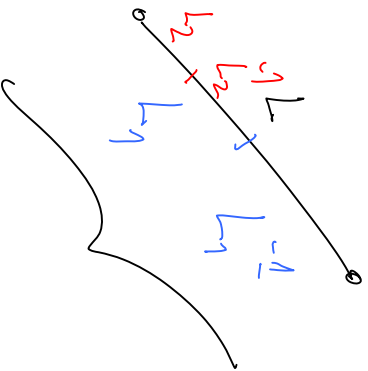
Michner M



symmetrie



Sinclair 2x
Spektrum

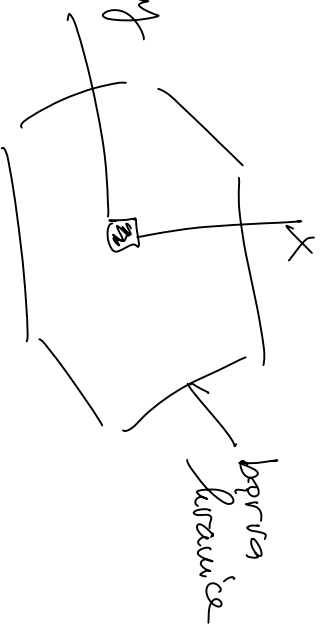


$\mathbb{Z} \text{gcd}(p, q)$
 $O(\log n)$ --- Pitthag

M M^{-1}
 $M_1 \circ M_2$
 \uparrow
 Inverse

Plüner' & Siraforaw'

• Saurkore plüner'



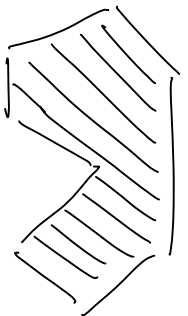
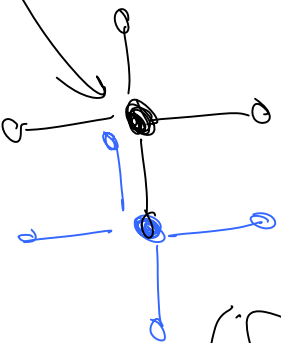
seed(x, y)

HM

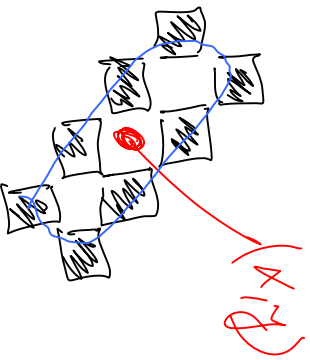
↓ Fill(x, y)

seed(x+1, y); seed(x-1, y-1)
seed(x, y+1); seed(x, y-1)

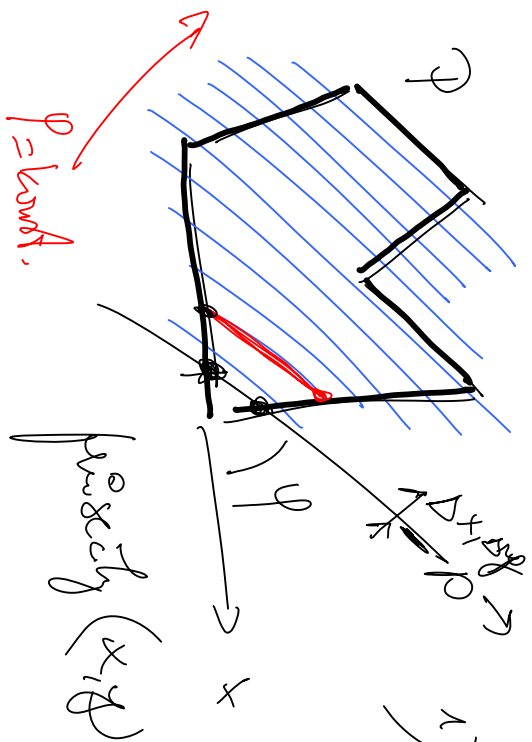
(x, y)



Problem:

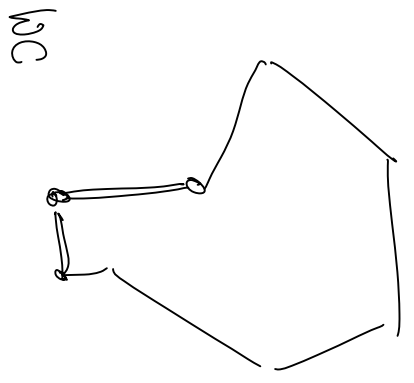


Modifikac pro E³

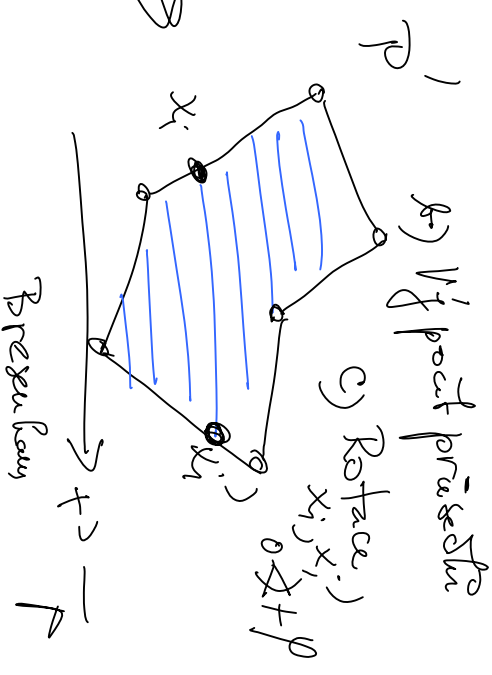
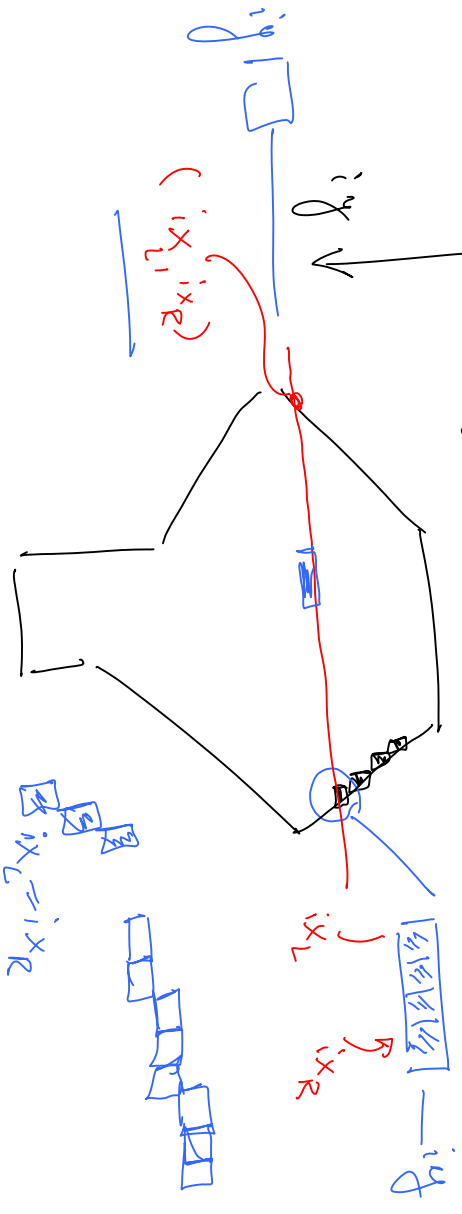


- 1) clipping
- 2) a) Rotate P o $\alpha - \varphi$ m- Γ kladat P o $\alpha + \varphi$ p- Γ kladat

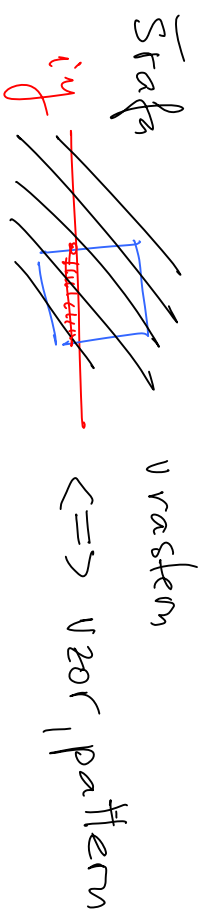
Šrafovaní v rasterovém prostředí



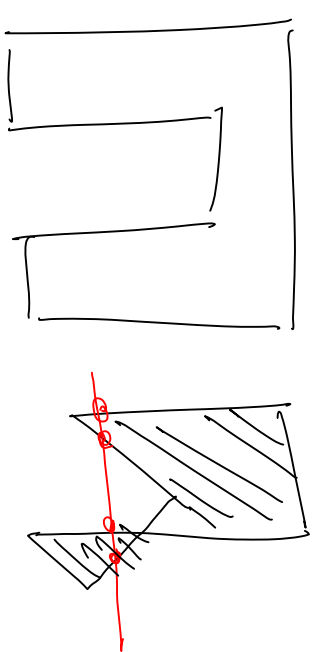
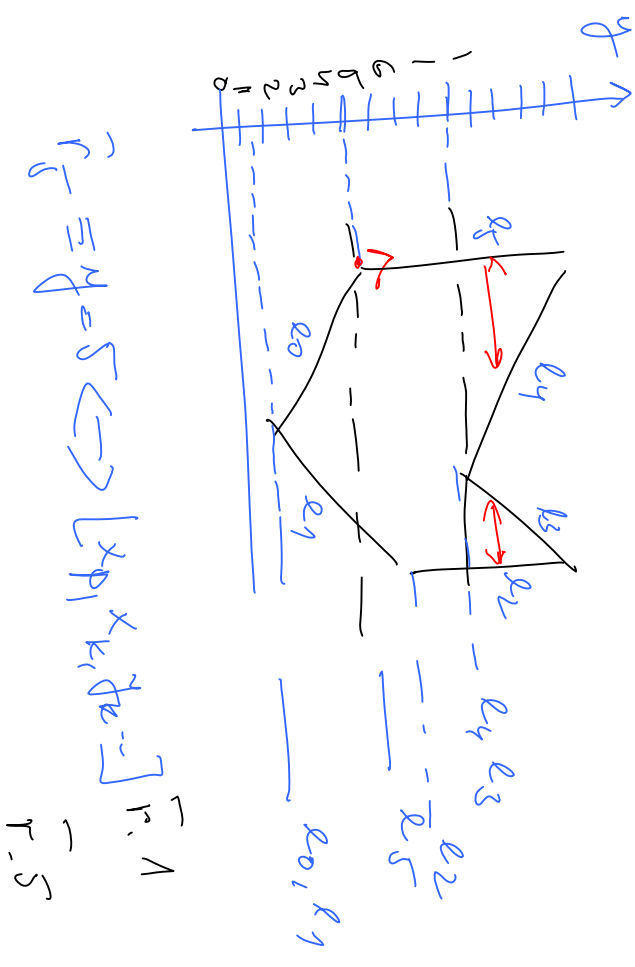
průsečky x
průsečky y



- b) Vř post přístěn
- c) Rotate x_i, x_i' o $\alpha + \varphi$



Scan-line (radkorzi konverzija)



Active Edge List

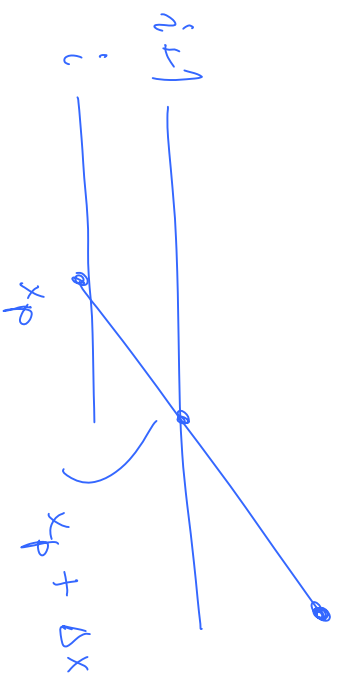
Active Edge List $\rightarrow [x_p, x_k, y_{k-1}]$

Active Edge List $= \emptyset$

Active Edge List $= \{e_0, e_1\}$

Active Edge List $= \{e_0, e_1, e_2\}$

~~sort~~ \rightarrow \otimes



x_p & n -AEL modification

per bankle γ

$$x_p = x_p + \Delta x$$

proceed normally $\Rightarrow \gamma_k \Rightarrow \gamma_{\text{red}} \text{ (same)}$
 \rightarrow AEL

Zilveraal / o f a 2 g / k se wu se v e h t ?