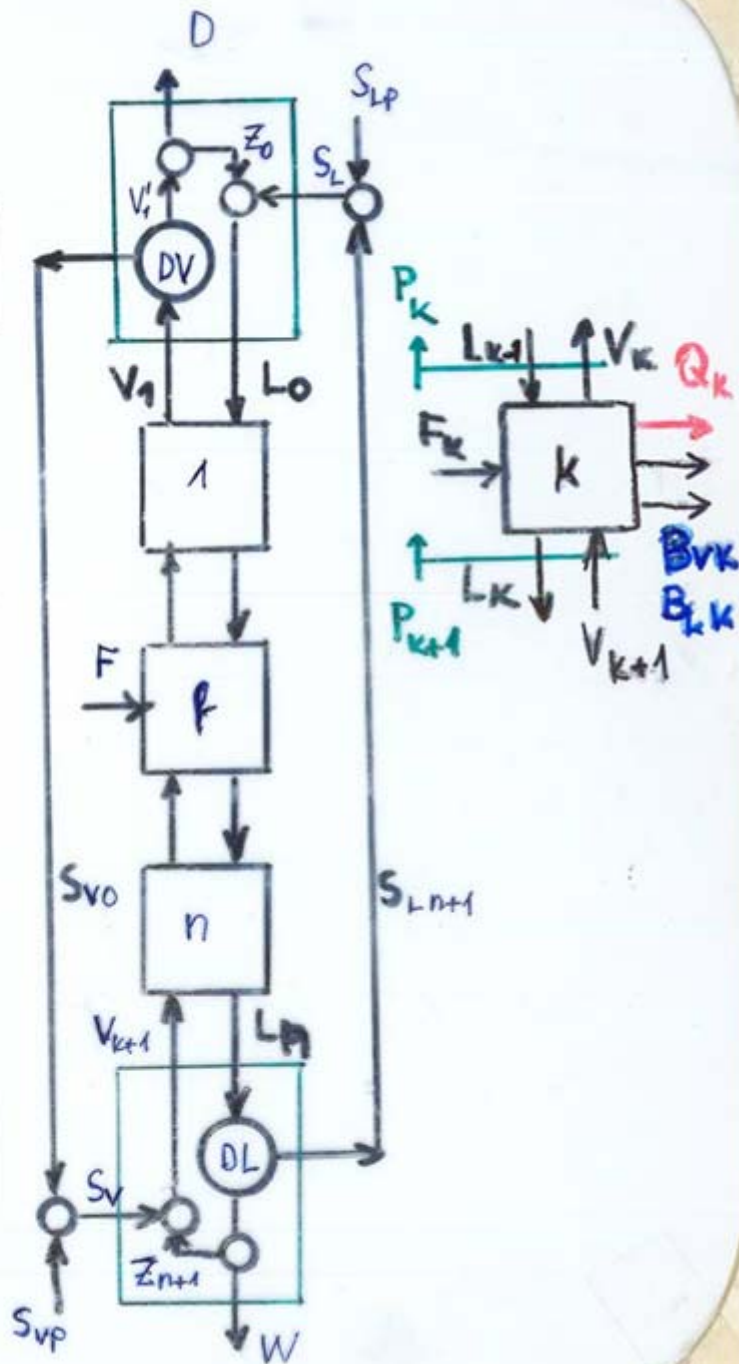
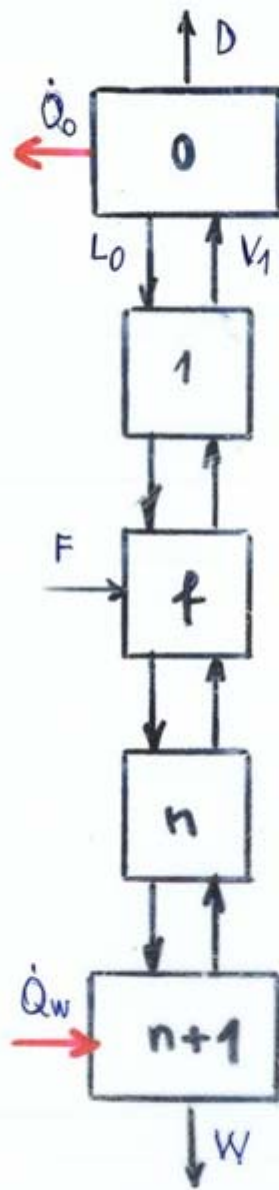
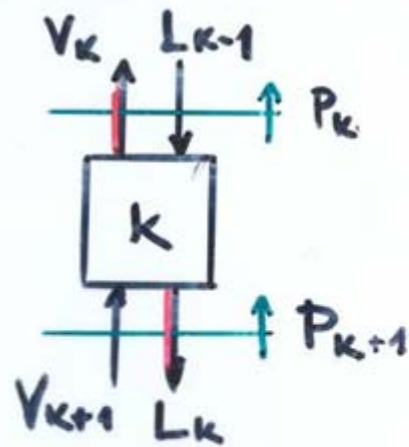


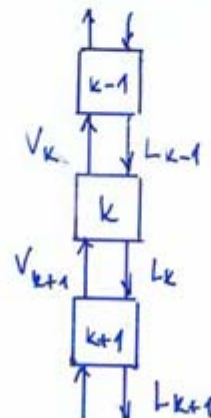




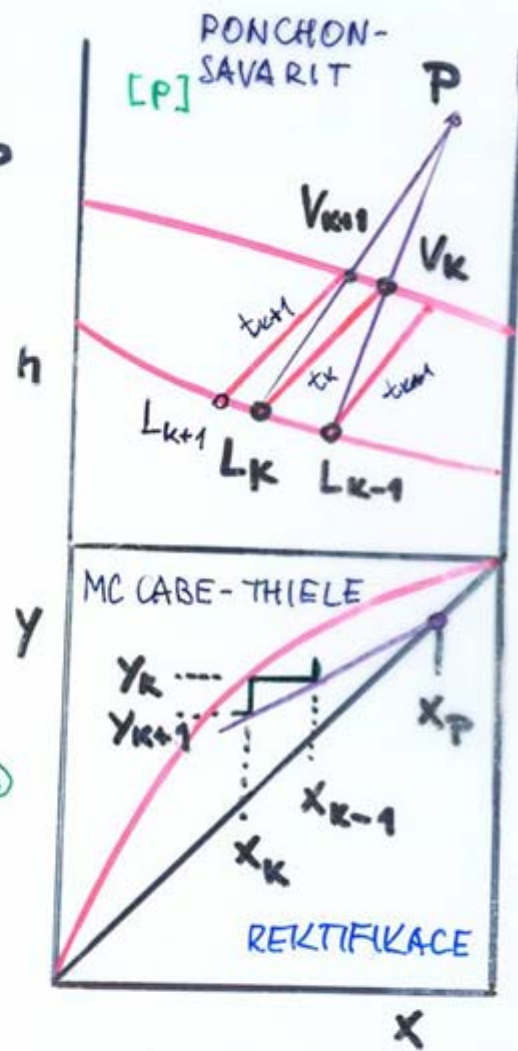
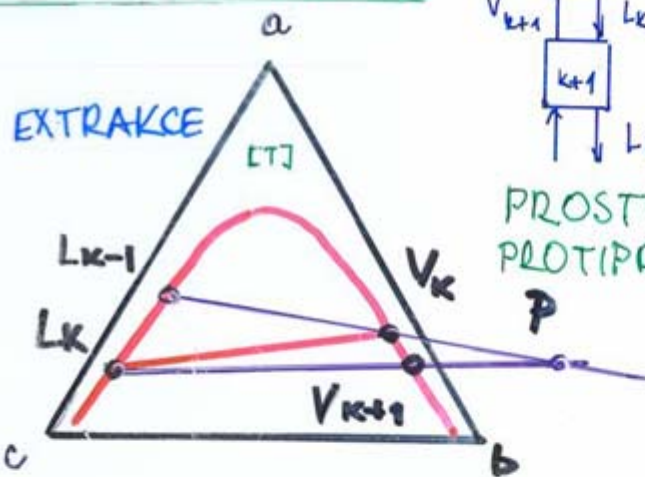
$$P_k = P_{k+1}$$

$$V_k - L_{k-1} = P$$

DIFERENČNÍ PROUD



PROSTÝ
PROTIPROUD



$$2D: \begin{bmatrix} 1 \\ y_{a,k+1} \\ h_{v,k+1} \end{bmatrix} - L_k \begin{bmatrix} 1 \\ x_{ak} \\ h_{lk} \end{bmatrix} = P_{k+1} \begin{bmatrix} 1 \\ z_{aP,k+1} \\ h_{P,k+1} \end{bmatrix}$$

$\uparrow$ $y_{b,k+1}$ $\uparrow$ x_{bk} $\uparrow$ $z_{bP,k+1}$

3D [T]

$$y_{k+1} = \frac{L_k}{V_{k+1}} x_k + \frac{P_{k+1} z_{P,k+1}}{V_{k+1}}$$

$y = x$

$$x(V_{k+1} - L_k) = z_{P,k+1} P_{k+1}$$

P_{k+1}



$$\text{tot.} \therefore y_1 = x_0 = x_D$$

$$h_{LO} = h_D$$

$$\frac{\dot{Q}_0}{v_1} = h v_1 - h_D$$

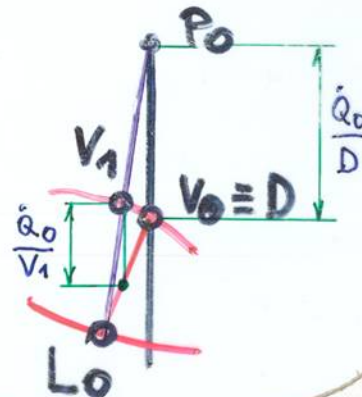
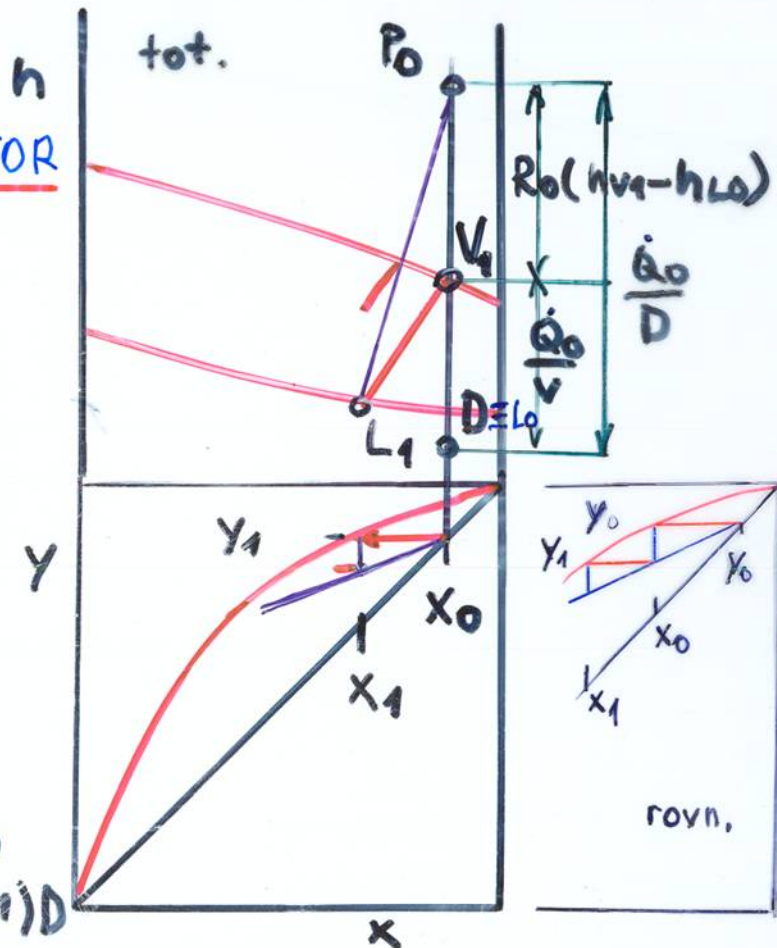
$$R_o = \frac{L_o}{\Delta}$$

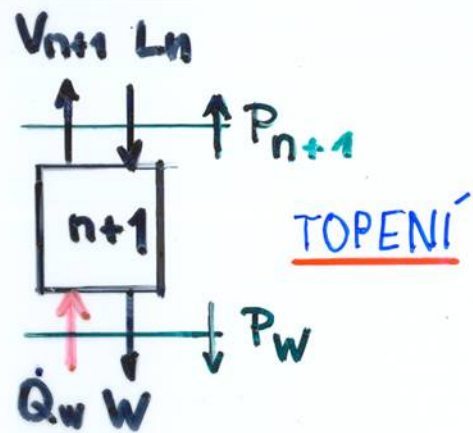
$$L_o = R_o D$$

$$V_1 = (R_0 + 1)D$$

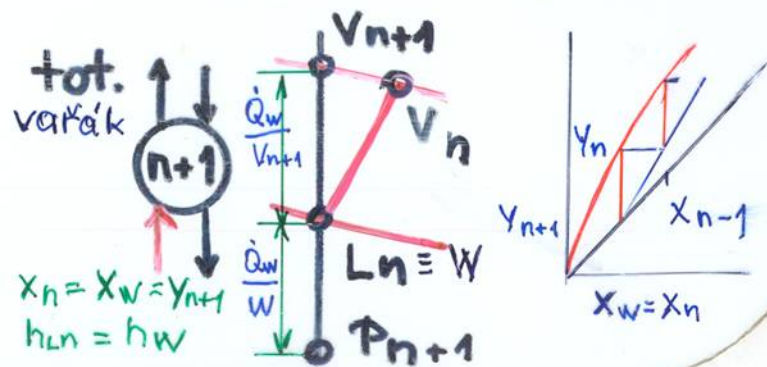
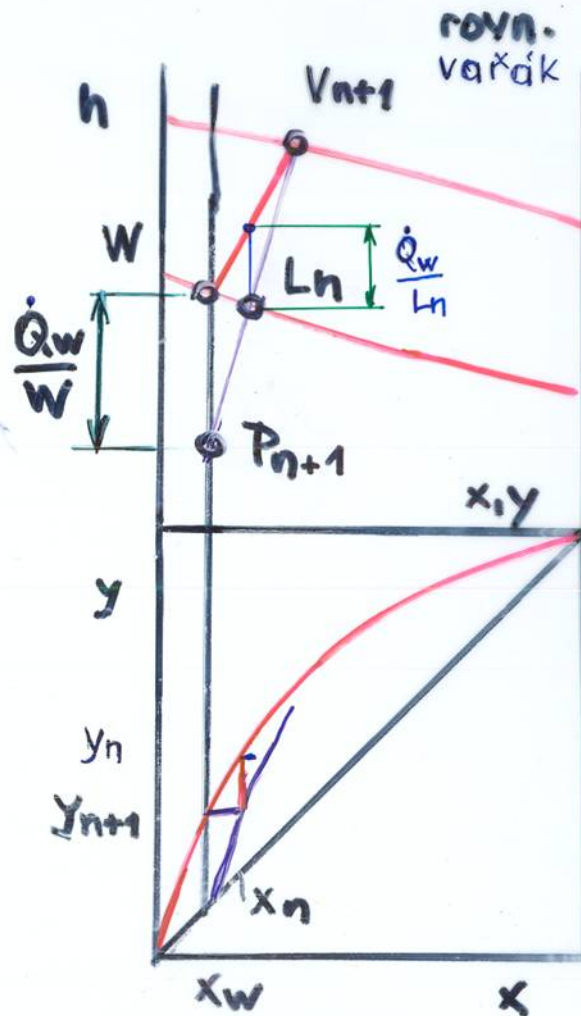
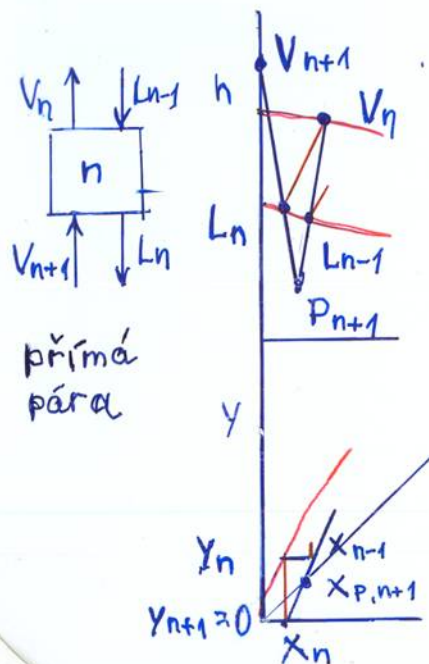
$$(R_0 + 1) D h_{v1} - R_0 D h_{L0} = D h_{p0}$$

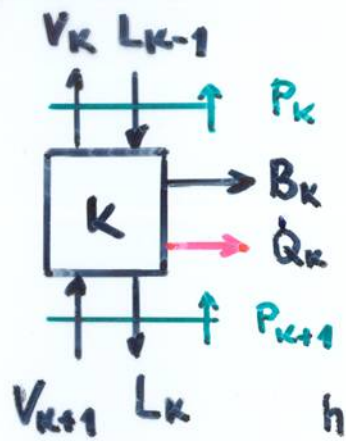
$$R_0 = \frac{h\nu_0 - h\nu_1}{h\nu_1 - h\nu_0} = \frac{\overline{P_0 V_1}}{\overline{V_1 L_0}}$$





$$P_{n+1} \begin{bmatrix} 1 \\ z_{P,n+1} \\ h_{P,n+1} \end{bmatrix} = -W \begin{bmatrix} 1 \\ x_{av} \\ h_w - \frac{\dot{Q}_w}{W} \end{bmatrix}$$

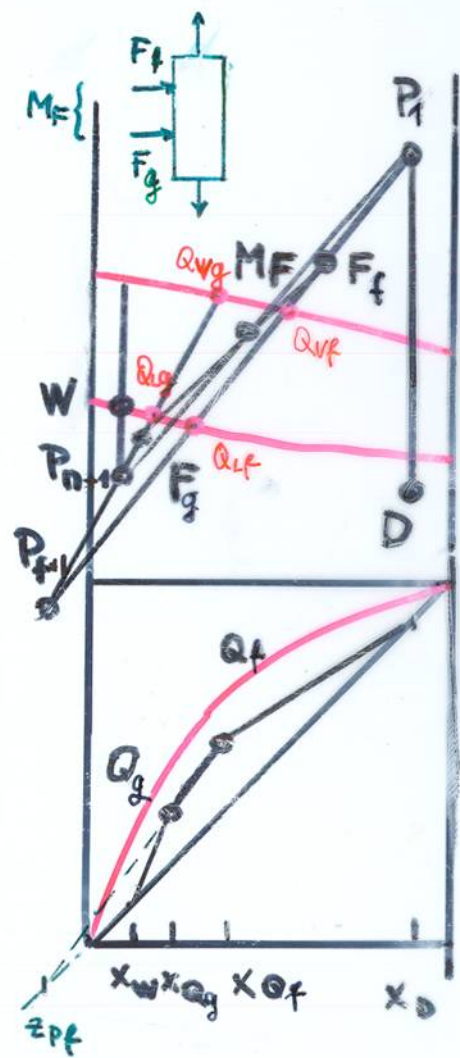
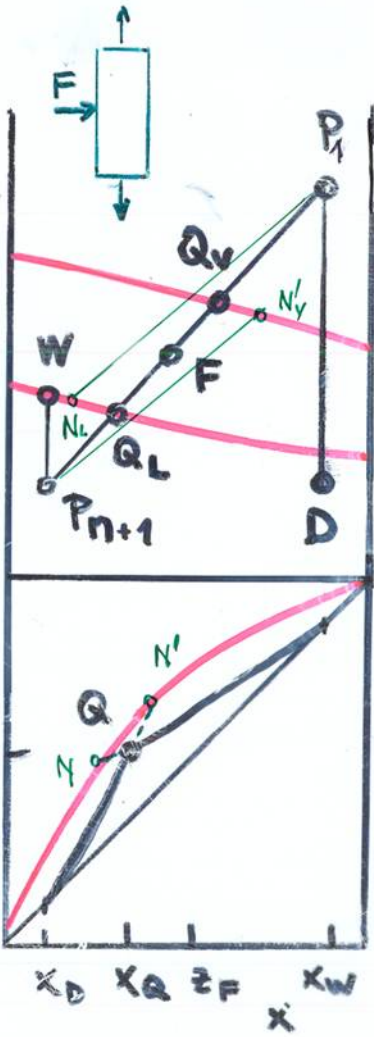
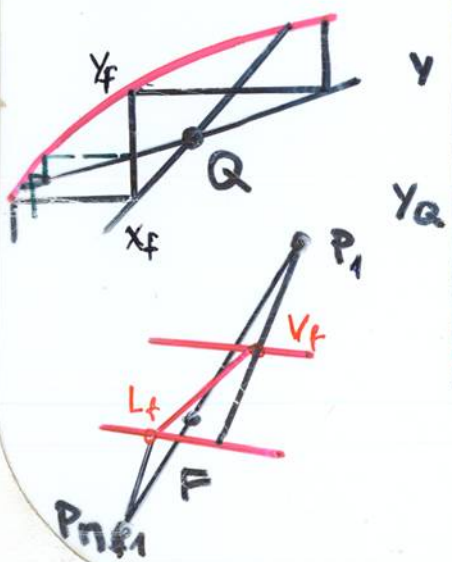


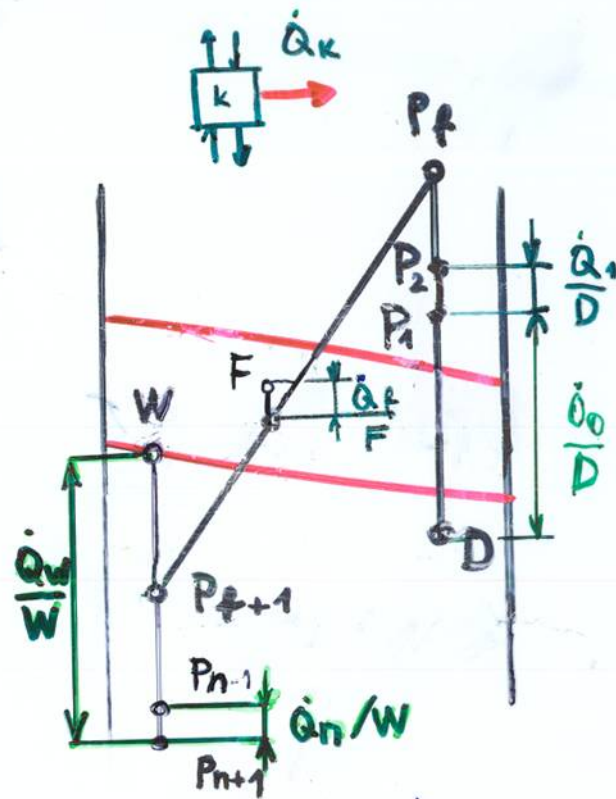
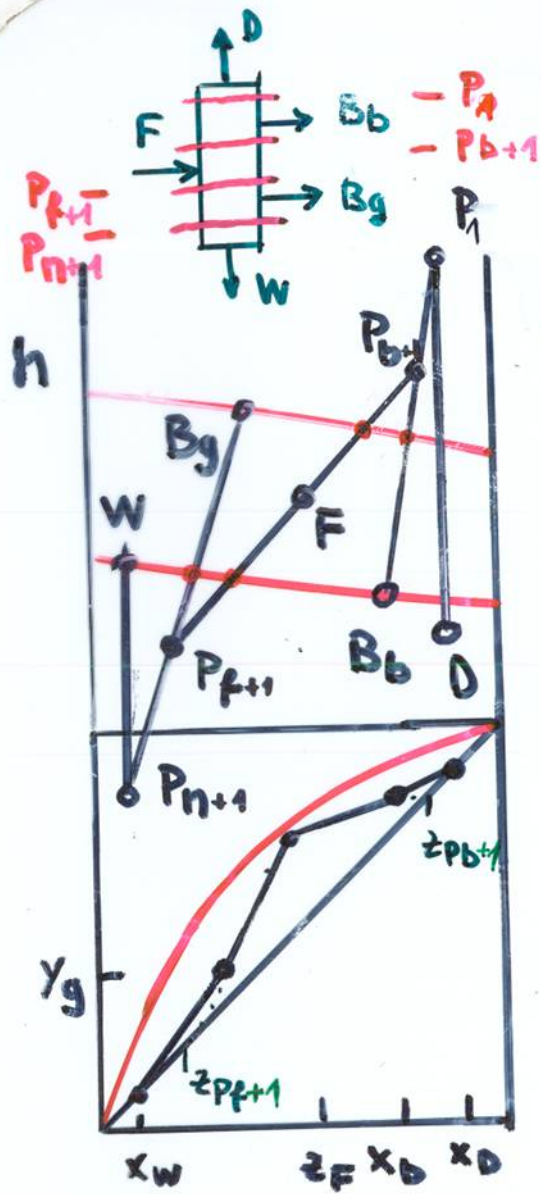


$$P_{k+1} \begin{bmatrix} 1 \\ z_{PK+1} \\ h_{PK+1} \end{bmatrix} = P_k \begin{bmatrix} 1 \\ z_{PK} \\ h_{PK} \end{bmatrix} + B_k \begin{bmatrix} 1 \\ z_{BK} \\ h_{BK} + \frac{\dot{Q}_k}{B_k} \end{bmatrix}$$

BOČNÍ PROUDY

opt. F

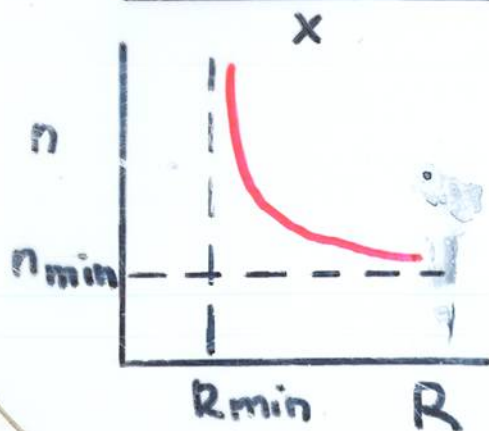




$$h_{P_{k+1}} - h_{P_k} = \frac{\dot{Q}_k}{P_k}$$

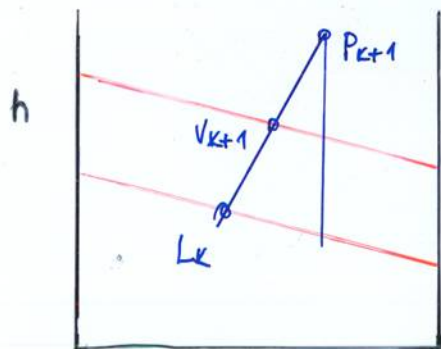
$$P_{k \leq f} = D$$

$$P_{k > f} = -W$$

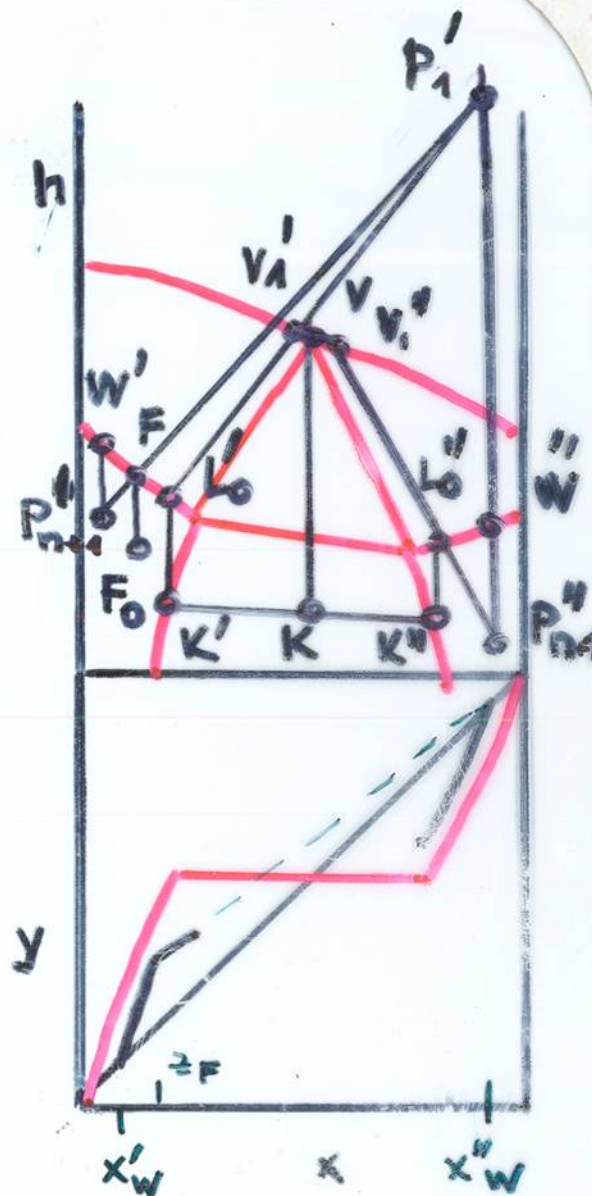
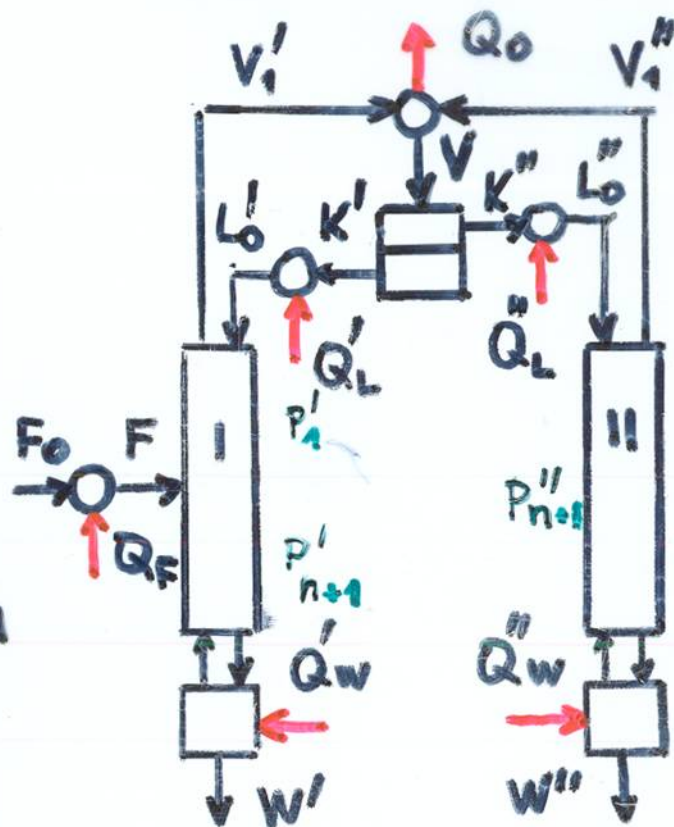
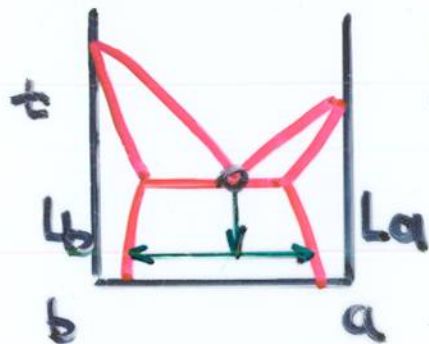
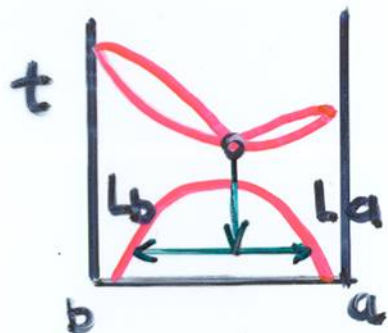
 X_a, Y_a

$$y_{i,k+1} = \frac{L_k}{V_{k+1}} x_{ik} + \frac{z_{ik} + p_{k+1}}{V_{k+1}}$$

$$\frac{L_K}{V_{K+1}} = \frac{P_{K+1} V_{K+1}}{P_{K+1} L_K}, \quad \frac{P_K}{V_{K+1}} = \frac{V_{K+1} L_K}{P_{K+1} L_K}$$

$$L_k, V_{k+1} \in HB \text{ (p.d.k. prav.)}$$
 x_a, y_a

L_k, V_{k+1} nezdv. na k



$$P_{n+1}' - W'$$

$$P_1' = W''$$

$$P_{n+1}'' - W''$$

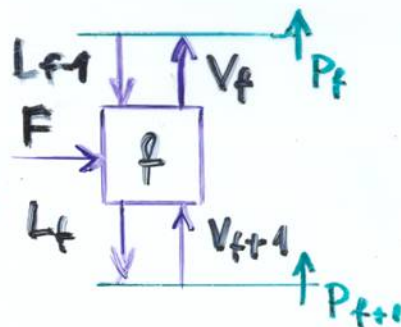
$$F + P_{n+1}' = P_1'$$

PRŮSEČÍK PRAC. PŘÍMEK

$$P_f = P_{f+1} + F$$

DEF. $qF = L_f - L_{f-1}$

$$(q-1)F = V_{f+1} - V_f$$



$$\begin{bmatrix} y_Q \\ h_{vQ} \end{bmatrix} V_f - \begin{bmatrix} x_Q \\ h_{LQ} \end{bmatrix} L_{f-1} = \begin{bmatrix} z_{Pf} \\ h_{Pf} \end{bmatrix} P_f +$$

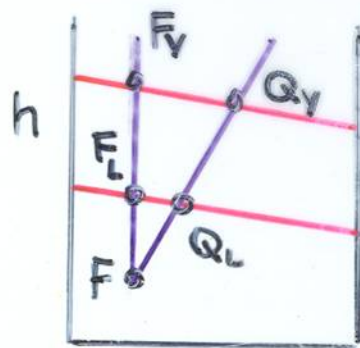
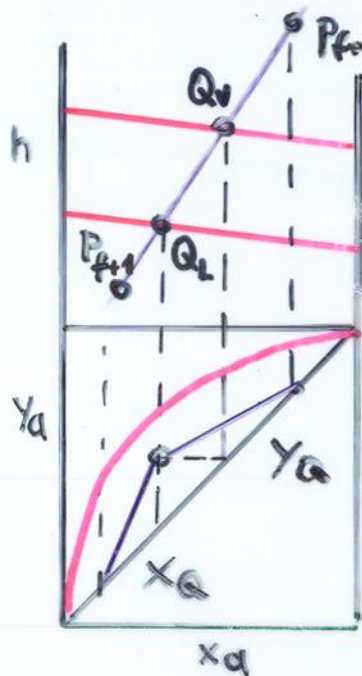
$$\begin{bmatrix} \\ V_{f+1} - \end{bmatrix} L_f = \begin{bmatrix} z_{Pf+1} \\ h_{Pf+1} \end{bmatrix} P_{f+1} -$$

$$\begin{bmatrix} \\ (1-q)F + \end{bmatrix} \begin{bmatrix} \\ qF \end{bmatrix} = \begin{bmatrix} z_F \\ h_F \end{bmatrix} F$$

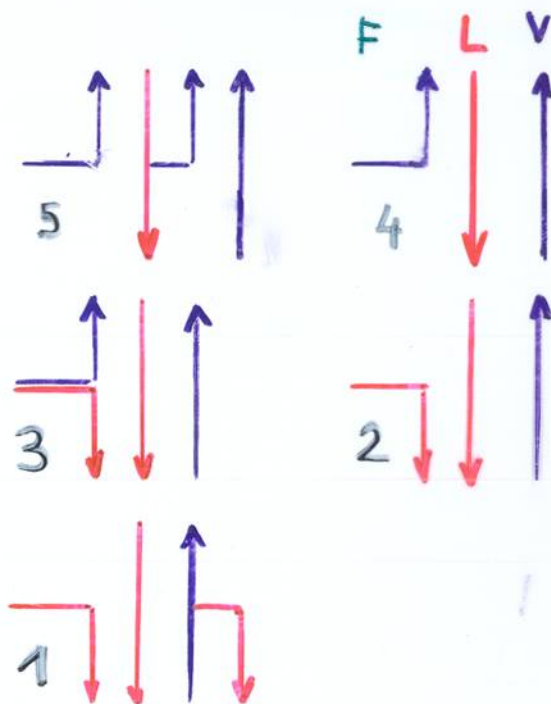
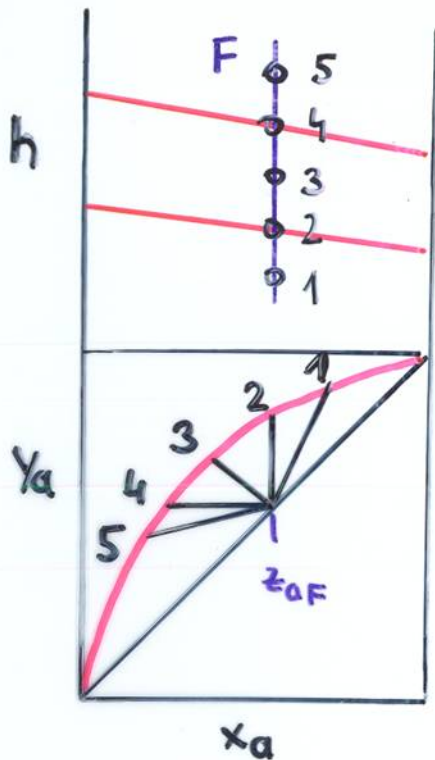
$$y_i = -\frac{q}{1-q} x_i + \frac{z_i F}{1-q}$$

$$q = \frac{h_{vQ} - h_F}{h_{vQ} - h_{LQ}} = \frac{h_{FV} - h_F}{h_{FV} - h_{FL}}$$

$$y_i = x_i \Rightarrow x_i = z_i$$



q:



PŘÍMKY

$$y_i = \frac{L_k}{V_{k+1}} x_i + \frac{z_{i0} w_{i0} P_{k0}}{V_{k+1}} \left| \frac{D}{D} \right|$$

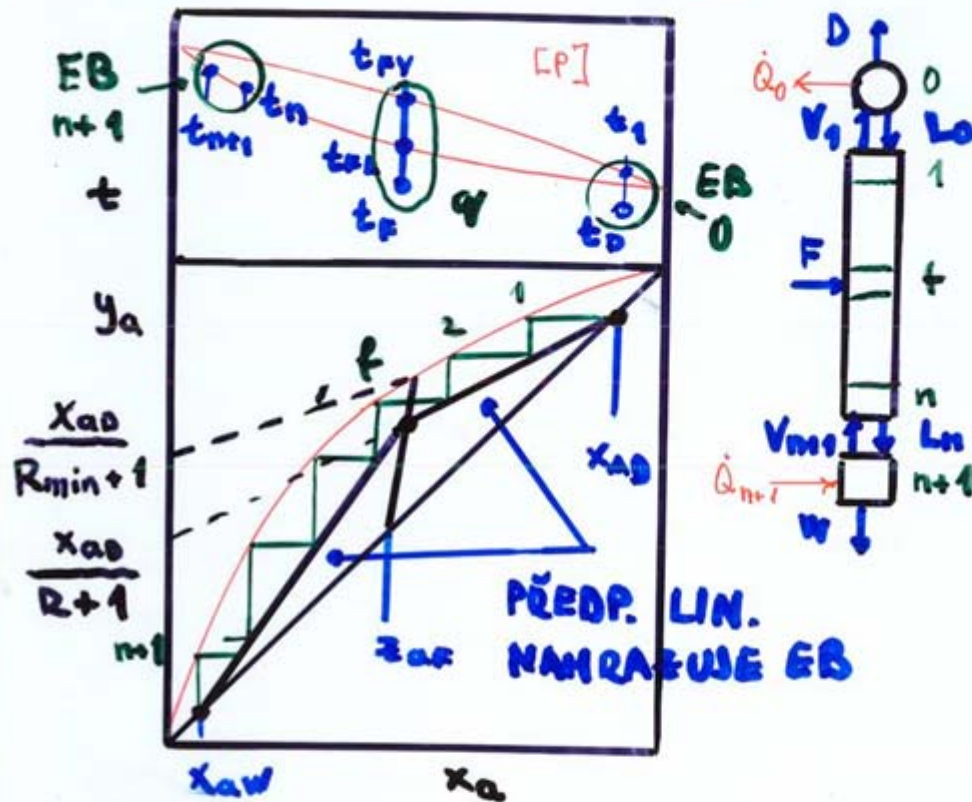
$$y_i = \frac{R}{R+1} x_i + \frac{x_{i0}}{R+1}$$

$$L_k = L_0 + \sum_{j=1}^k (q_j F_j - B_{Lj})$$

$$V_{k+1} = V_1 + \sum_{j=1}^k [(1 - q_j) F_j - B_{Vj}]$$

$$\frac{L_0}{D} = R_0 \quad \frac{V_1}{D} = R_0 + 1$$

KONST. MOL. TOKY FÁZÍ



$(x_{aQ}; y_{aQ})$
 $(k=f-1)$

$$y_{iQ} = \frac{L_{f-1}}{V_f} x_{iQ} + \frac{z_{iF} P_f}{V_f}$$

$$y_{iQ} = -\frac{q_f}{1-q_f} x_{iQ} + \frac{z_{iF}}{1-q_f}$$

$$y_{iQ} = \frac{L_f}{V_{f+1}} x_{iQ} + \frac{z_{iF+1} P_{f+1}}{V_{f+1}}$$
 $(k=f)$

$$x_{iQ} = \frac{z_{iF} V_{f+1} - (1-q_f) z_{iF+1} P_{f+1}}{L_f + q_f P_{f+1}}$$

$$= \frac{z_{iF} V_f - (1-q_f) z_{iF} P_f}{L_{f-1} + q_f P_f}$$



$$P_1 = V_1 - L_0 = D + S_v = P_0$$

$$x_{P_1} (V_1 - L_0) = y_1 V_1 - x_0 L_0 \Rightarrow V_1$$

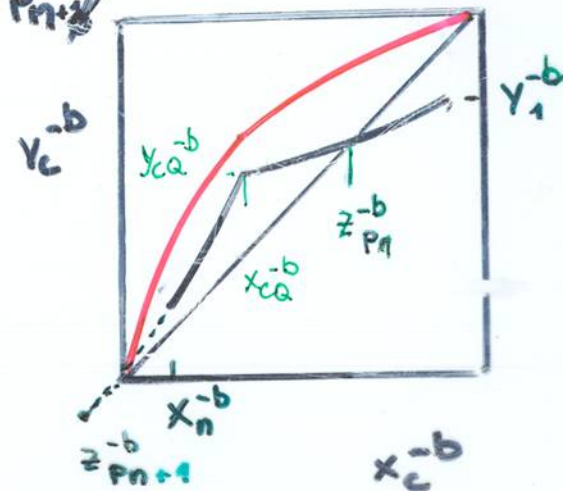
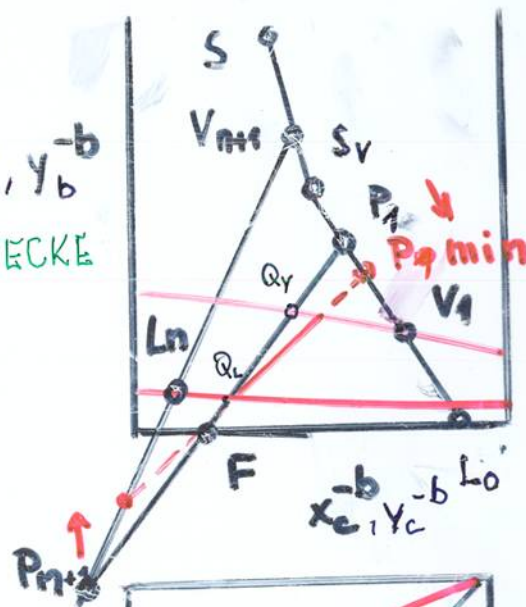
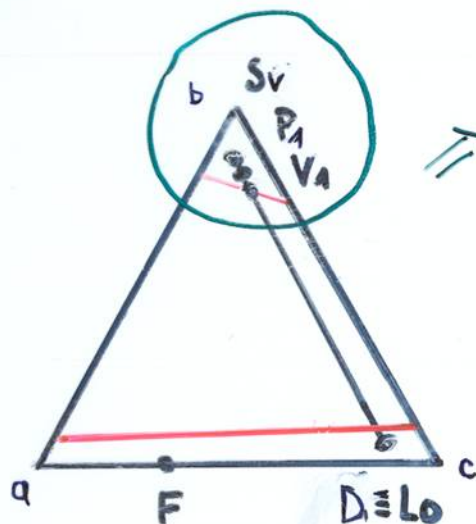
$$x_{P_1} (D + S_v) = x_b' D + y_{Sv} S_v \Rightarrow S_v$$

$$\frac{L_0}{D} = \frac{\overline{DS_v}}{\overline{P_1 S_v}} \frac{\overline{V_1 P_1}}{\overline{D V_1}}$$

ZPĚTNÝ TOK

$$x_b^{-b}, y_b^{-b}$$

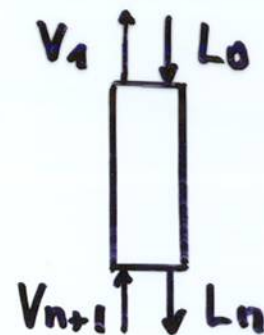
JANECKE



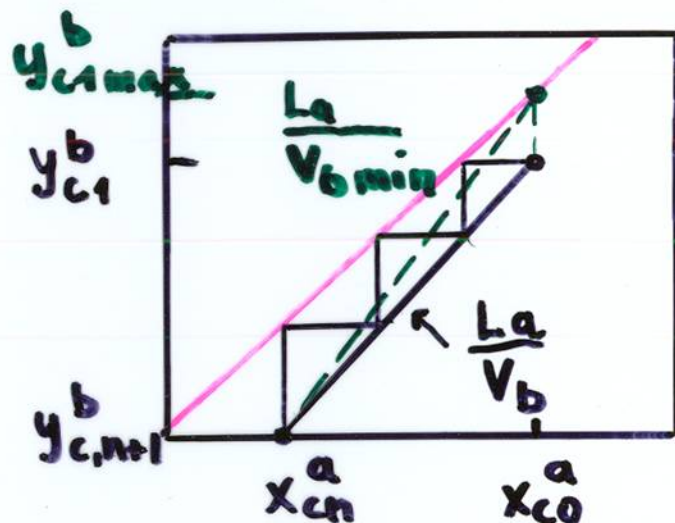
$$\overline{DS_v} = \overline{DP_1} + \overline{P_1 S_v}$$

$$\overline{L_0 P_1} = \overline{L_0 V_1} + \overline{V_1 P_1}$$

NEMÍŠITELNÁ ROZP. (a, b)



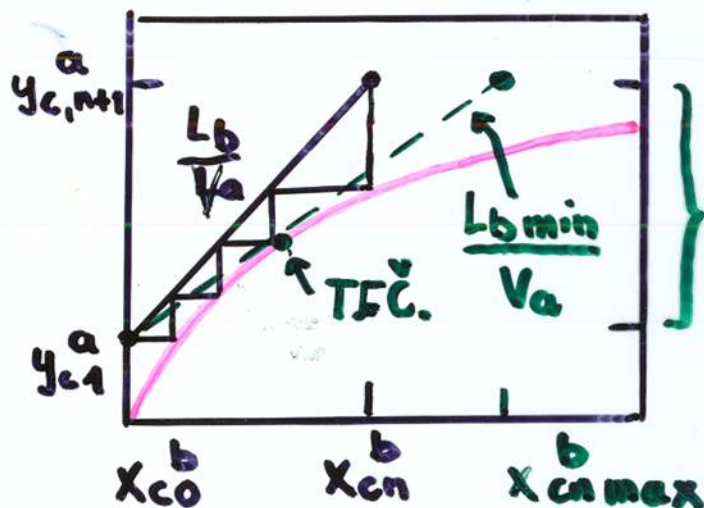
EXTR.



DANÉ DĚLENÍ

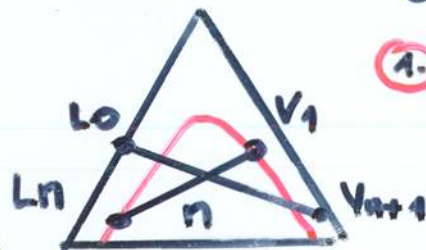
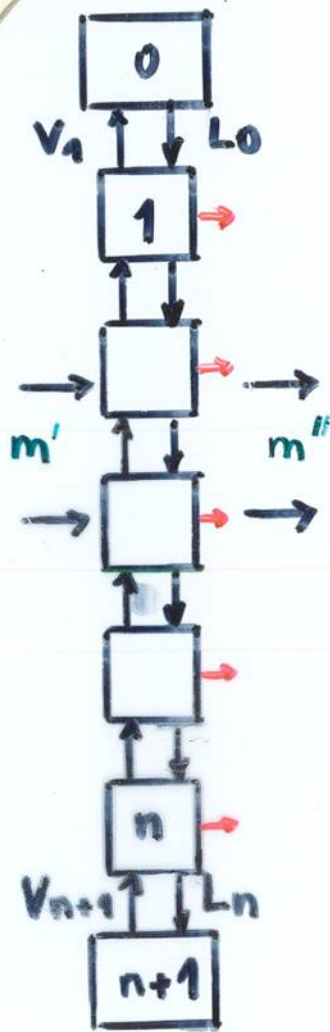
$$\frac{L_a}{V_b} = \frac{y_{c1}^b - y_{c,n+1}^b}{x_{co}^a - x_{cn}^a}$$

ABS.



DANÉ DĚL.

$$\frac{L_b}{V_a} = \frac{y_{c,n+1}^a - y_{c1}^a}{x_{cn}^b - x_{co}^b}$$



boč. vstup výstup
 $m = m' + m'' < n$
 $N_v \quad \downarrow \quad \downarrow$
 $3c+8 \quad 2c+7$

bez
 boč.
 $n-m$
 $\downarrow$
 $2c+6$

$$N_v(1, n) = \sum N_v^e - \sum N_i + N_0$$

$$\sum N_v^e = (n-m)(2c+6) + m'(3c+8) + (m-m')(2c+7)$$

$$\sum N_i = 2(n-1)(c+2)$$

$$N_0 = m + 1$$

$$N_v(1, n) = 2(n+m) + m'(c+1) + 2c+5$$

$$N_v(0, n+1) = N_v(1, n) + N_v(0) - 2(c+2) + N_v(n+1) - 2(c+2)$$



$m=0$: $N_v(1, n) = 2n + 2c + 5$ (extr.)

int. L_0, V_{n+1}

P_k, Q_k

ext. L_0

$2(c+1)$

$2n$

1

$N_{vr} = 2$

① exist.

n

V_{n+1}

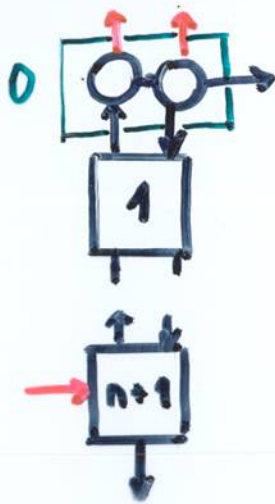
$\Rightarrow$ konc. sl.

② proj.

2 údaje oddělení

(V_{n+1} , konc.)

$\Rightarrow n$



tot. kond. + dělič

$$Nv(0) = (c+4) + (c+5) - (c+2) = c+7$$

rovn. var.

$$N(n+1) = c+4$$

$$Nv(0, n+1) = 2(n+m) + m'(c+1) + 8$$

$P_k, P_{děl}, P_{kond}, P_{var}$

Q_1 až $Q_n, Q_{děl}$

F_k

množství B_k

$$\left. \begin{array}{l} n+3 \\ n+1 \\ m'(c+2) \\ m-m' \end{array} \right\}$$

$$2n+m+m'(c+1)+4$$

$$Nvr = m+4$$

$$m=m'=1 \Rightarrow Nvr=5$$

1	n	1
	umíst. F, B	m
	R	1
	$\dot{Q}_w (\dot{V}_{uax}, \dot{D})$	1
	$\dot{Q}_D (t_0)$	1
	$\Rightarrow$ konc. sl.	

2.	R	1	L1
	t_0	1	L2
	opt. F	m	LK
	+ pořad. odběr		M1
	dělení	2 $\Rightarrow$	TK
	$\Rightarrow n$		T1
			T2