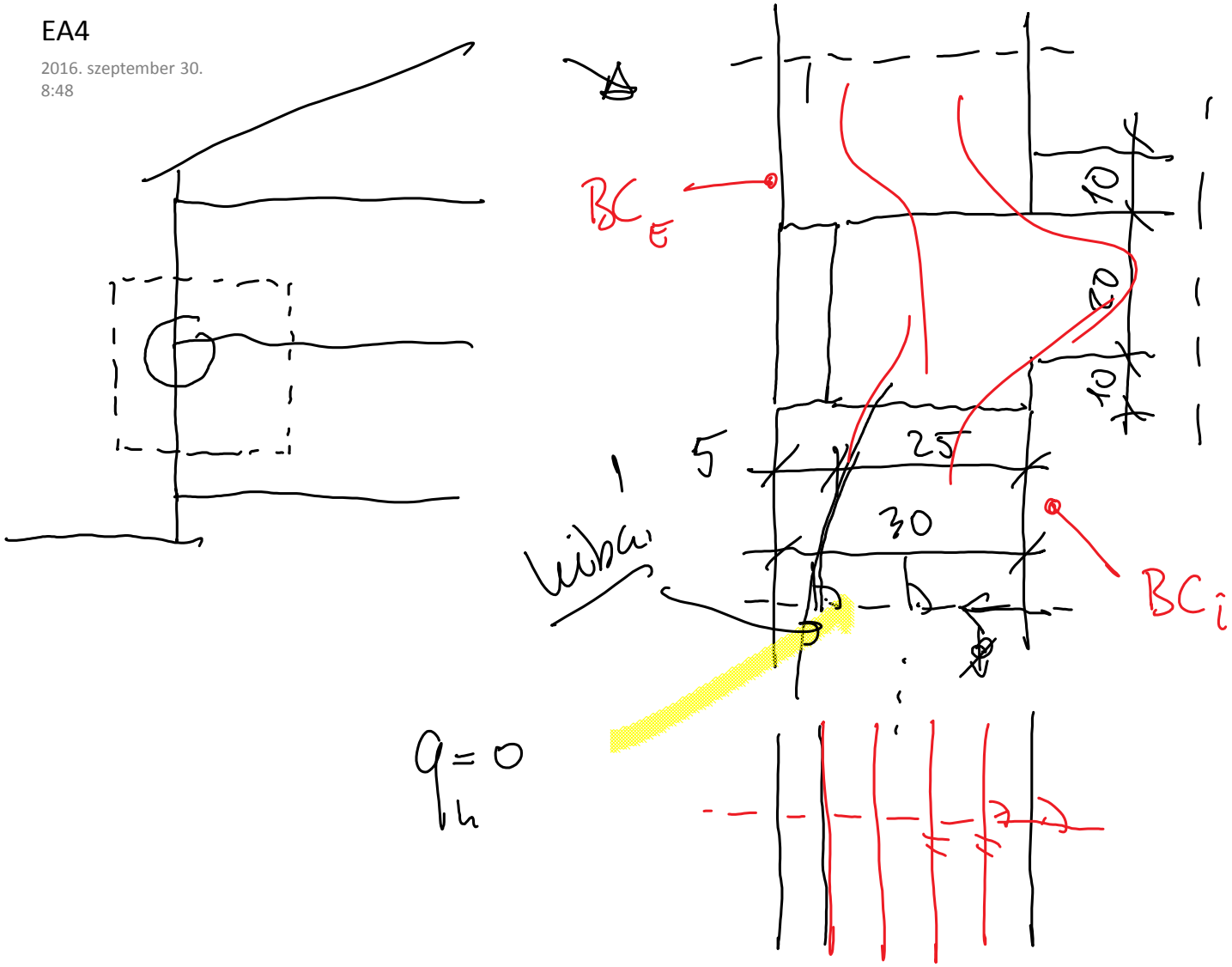
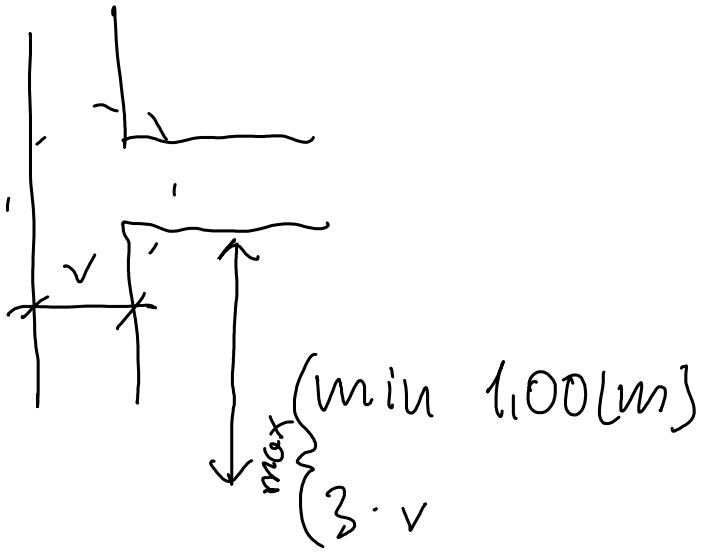
EA4

2016. szeptember 30.
8:48





I pre-processing
- geometria
- anyagjellemzők
- fizika
- peremfeltételek
- kezdeti értékek
- numerikus.. - háló
- diszkretizáció
...

háló finomítás vizsgálat ...

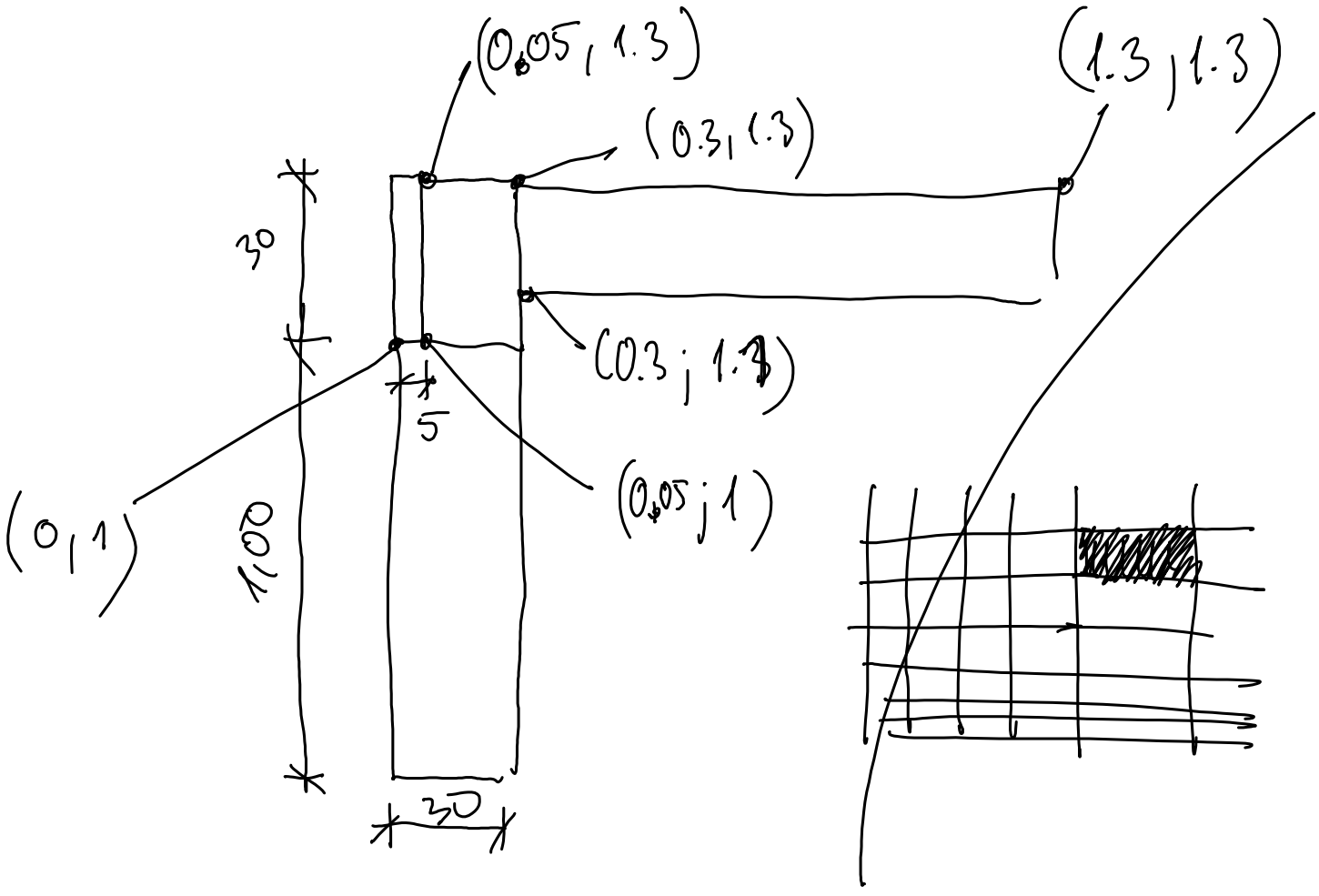
II megoldás

III post-processing
- konvergencia?
- eredmények ellenőrzése
- plauzibilitás?
- validálás — analitikus megoldás
mérés
numerikus

numerikus eredmény

- kiértékelés → grafikus
  → numerikus

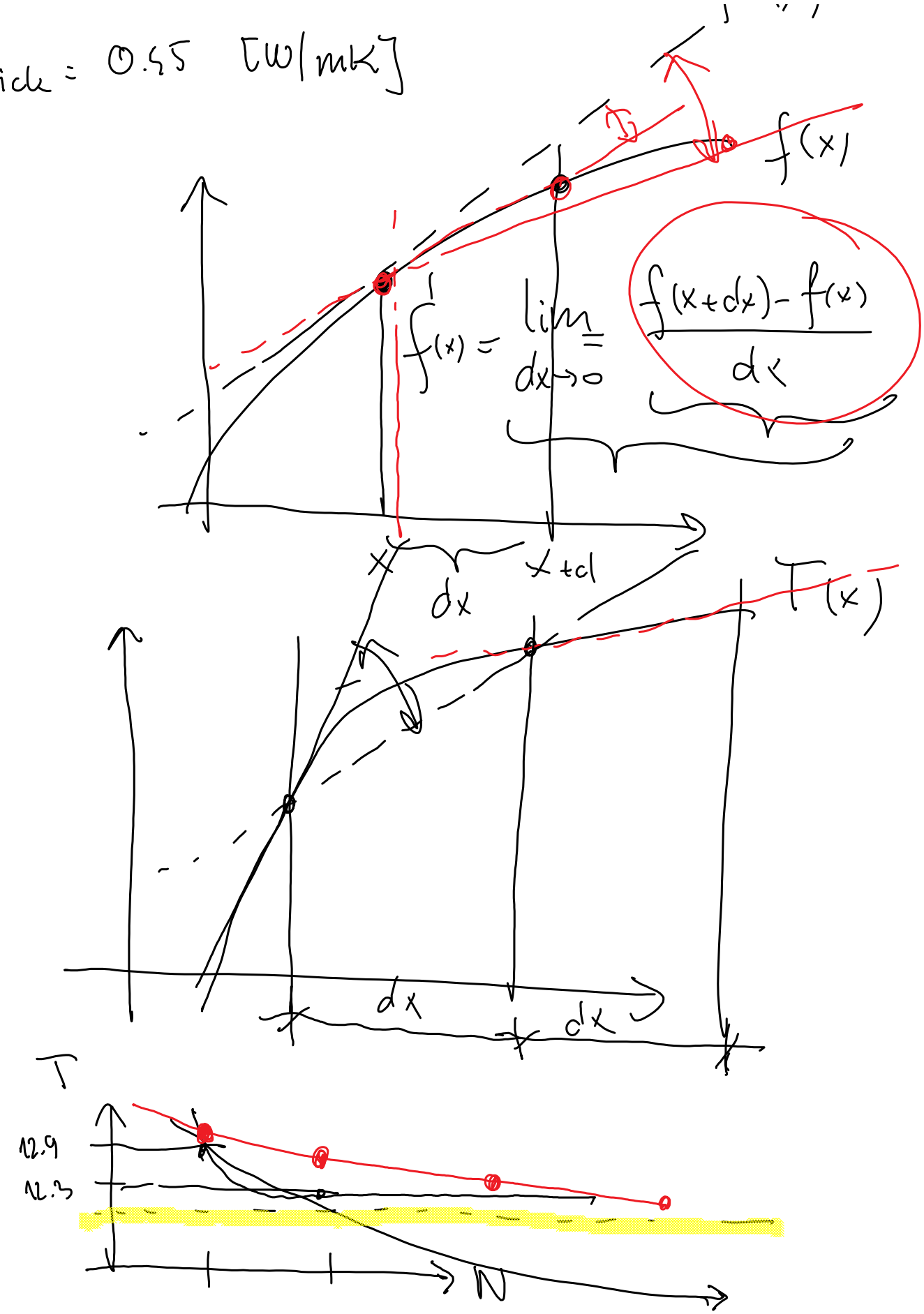
output



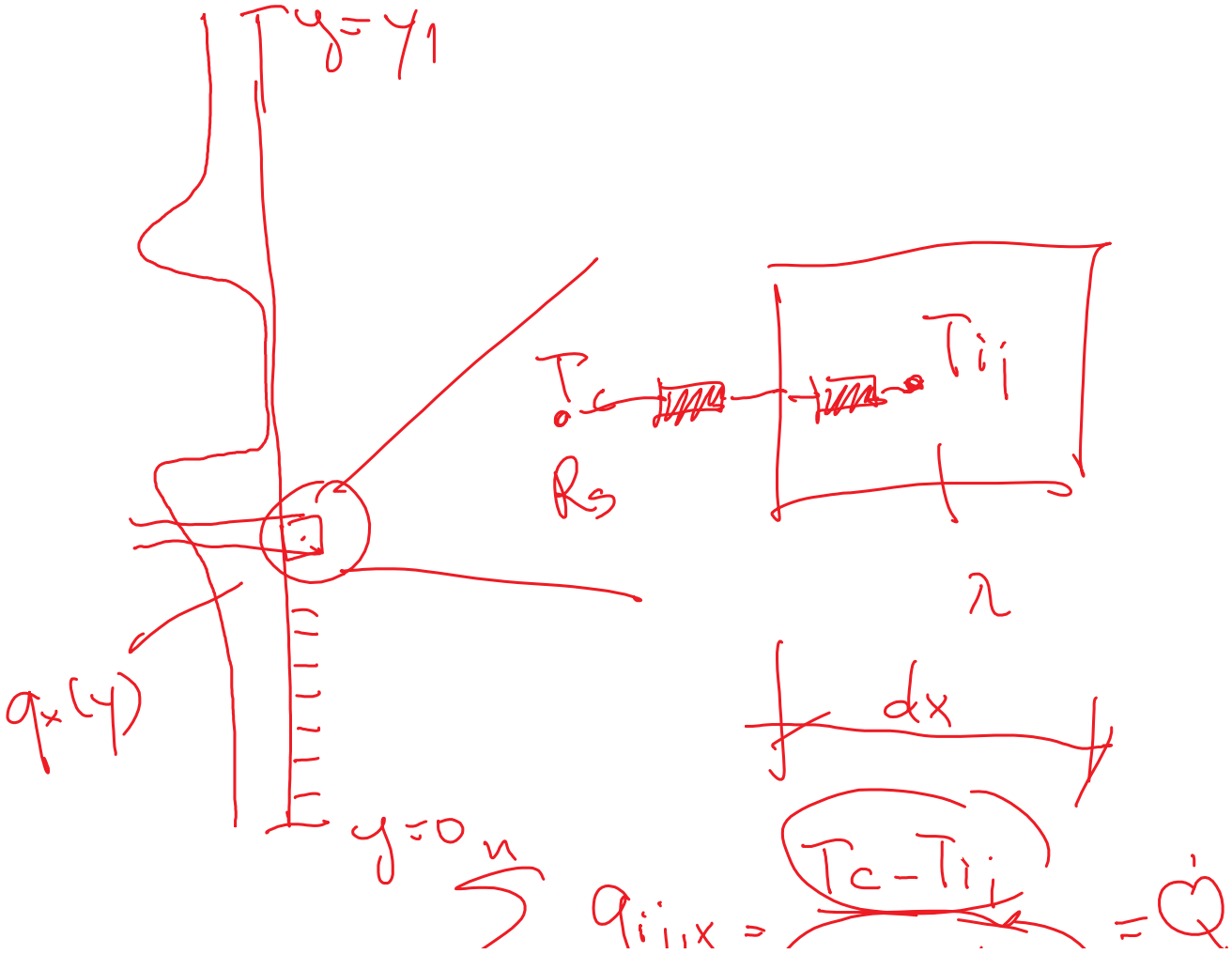
λ . . . 0.55 [W/mK]

$f'(x)$

$\lambda_{brick} = 0.55 \ [W/mK]$



$$q = -\lambda \nabla T$$



$$\sum_{i=0}^{n} q_{i,1x} = \frac{|t_c - t_i|}{R_{st} + \frac{dx}{2 \cdot \lambda}} = \dot{Q} \quad \left[\frac{W}{m}\right]$$

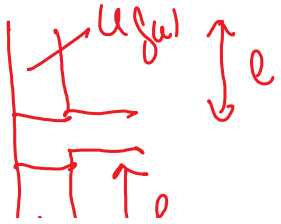
$$\int_{y=0}^{y'} q_x(y)\,dy = \boxed{\frac{\dot{Q}}{[W/m]}} = 73{,}3 \left[\frac{W}{m}\right]$$

$$\frac{\dot{Q}}{\Delta T} = \frac{73{,}3}{20} \simeq 3{,}665 \left[\frac{W}{mK}\right] = L_{2D}$$

Termikus csatolási tényező

$\frac{W}{mK}$ $\quad$ $\frac{W}{m^2K}$ $\quad m$

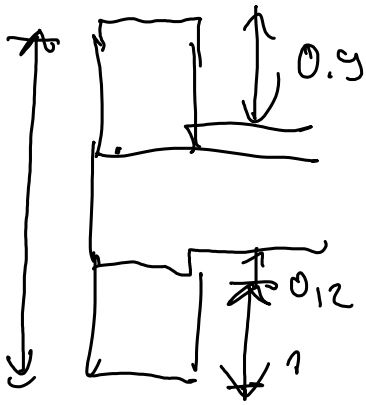
$$\boxed{L_{2D}} = U_{fal} \cdot l_{fal} + \text{hiba} = \boxed{\sum U \cdot l} + \boxed{\psi}$$



$$\psi_i = \underbrace{L_{2D}}_{\text{valós}} - \underbrace{\sum U \cdot Q_i}_{1D} \qquad \left[\frac{W}{mK}\right]$$

2D

$$3{,}665 - 1{,}195 \cdot 1.9 = 1{,}395$$



$$\frac{1}{\frac{0{,}13}{0.45} + 0.13 + 0{,}04} = 1{,}195$$