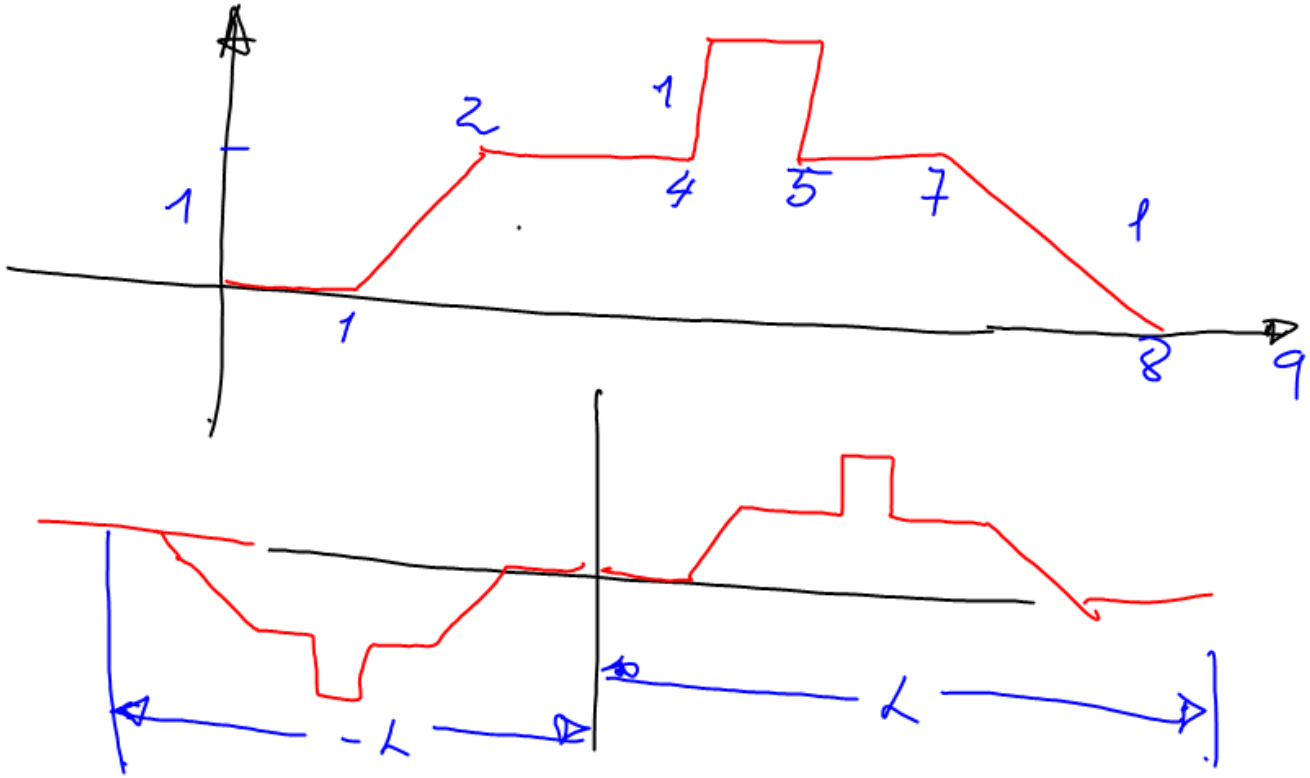
1
2
1
1
4
5
7
1
1
8
9
-L
L

$$z(x,y) = f(y^2 - x^2) + \frac{e^{x^2}}{e^{y^2}} + 2$$

$$\frac{\partial z}{\partial y} - 2\frac{\partial z}{\partial x} = Q(x,y)$$

$$f(y^2 - x^2) + \frac{1}{e^{(y^2 - x^2)}} + 2$$

$$F(y^2 - x^2)$$

$$\frac{\partial z}{\partial y} - 2\frac{\partial z}{\partial x} = 0$$

$$2x' + y' - 2x = 1$$
$$x' + y' - 3x - 3y = 2$$

$$x' + (0) + x + 3y = -1$$
$$(0) + y' - 4x - 6y = 3$$

$$\Rightarrow \quad x' = a_{11}x + a_{12}y + b_1(t)$$
$$y' = a_{21}x + a_{22}y + b_2(t)$$

$$x' = -x - 3y - 1$$
$$y' = 4x + 6y + 3$$

$$\begin{bmatrix} x' \\ y' \end{bmatrix} = \begin{bmatrix} -1 & -3 \\ 4 & 6 \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix} + \begin{bmatrix} -1 \\ 3 \end{bmatrix}$$

e^{At}

$$\vec{x} = e^{At} \begin{bmatrix} 0 \\ 0 \end{bmatrix} + \int_0^t e^{A(t-z)} \vec{b}(z)\, dz$$