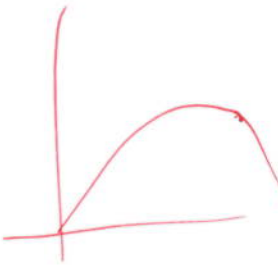
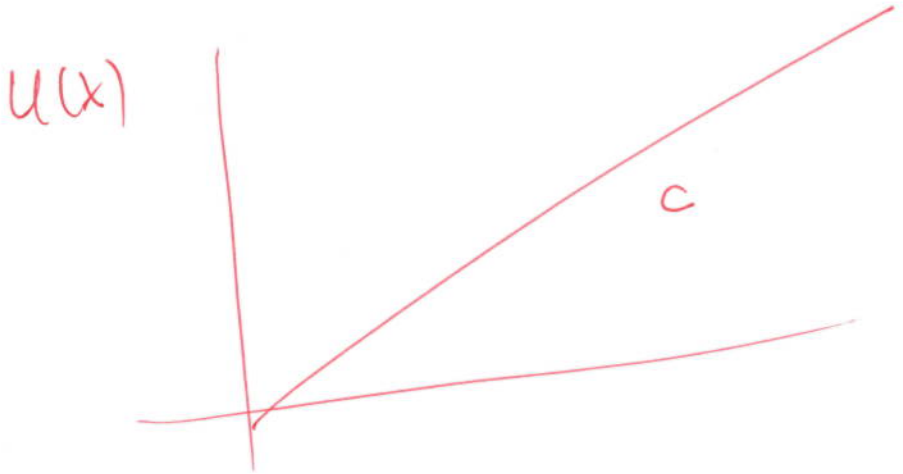
$$\partial_x \rho = a(t)\,\partial_t \rho + b(t)\,\partial_t^2 \rho + c(t)\,\rho$$

$$\dot{\rho} = -\rho\,(\underbrace{c\,\partial_x u + \partial_x^2 u}) \qquad c$$






$u = \beta t - e^{-t}$

$\partial_x u \neq 0 \qquad \partial_x^2 u = 0 \rightarrow u(x) = \alpha \cdot x$

$\underbrace{\partial_x u + \partial_x^2 u} = \underline{\text{const}}.$

$e^{-\lambda t}$

$u' + u'' = c. \qquad v = e^{-t}$

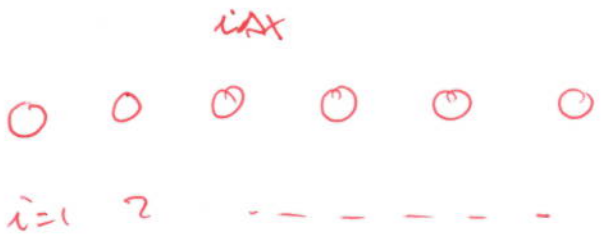
$v + v' = c. \qquad \boxed{v = \beta + e^{-t}} = u'$

$e^{-\lambda t} \qquad v' = -e^{-t}$

$\dot{\rho} = u\rho$

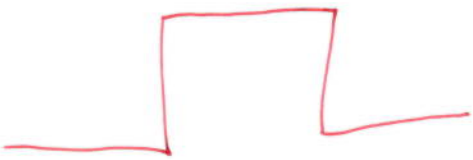
$$\dot{\rho} = -\Delta x \frac{\partial \rho}{\partial x} + \underbrace{u(\Delta x)^2}_{\tilde{u}\cdot\Delta t} \frac{\partial^2 \rho}{\partial x^2}$$

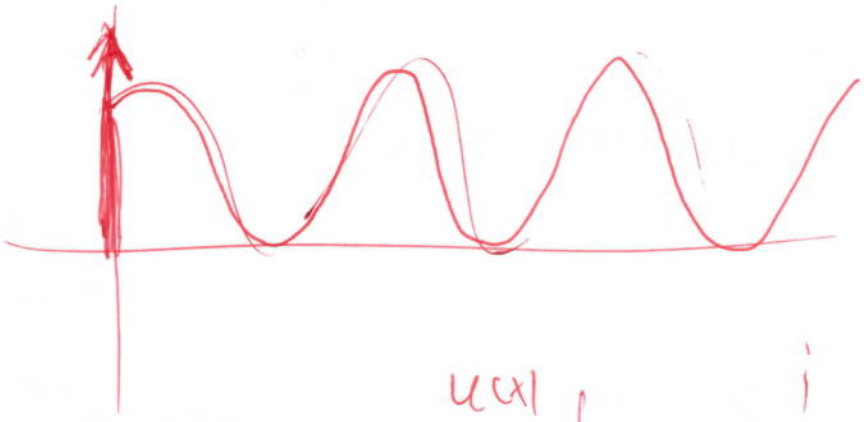
$$-\rho\,\Delta x \frac{\partial u}{\partial x} + \rho(\Delta x)^2 \frac{\partial^2 u}{\partial x^2}$$




$u \cdot \Delta x$ (under brace) $= \tilde{u}$

$\overline{T}_{i\to j} =$





$\rho + \rho'$

$u(x)$