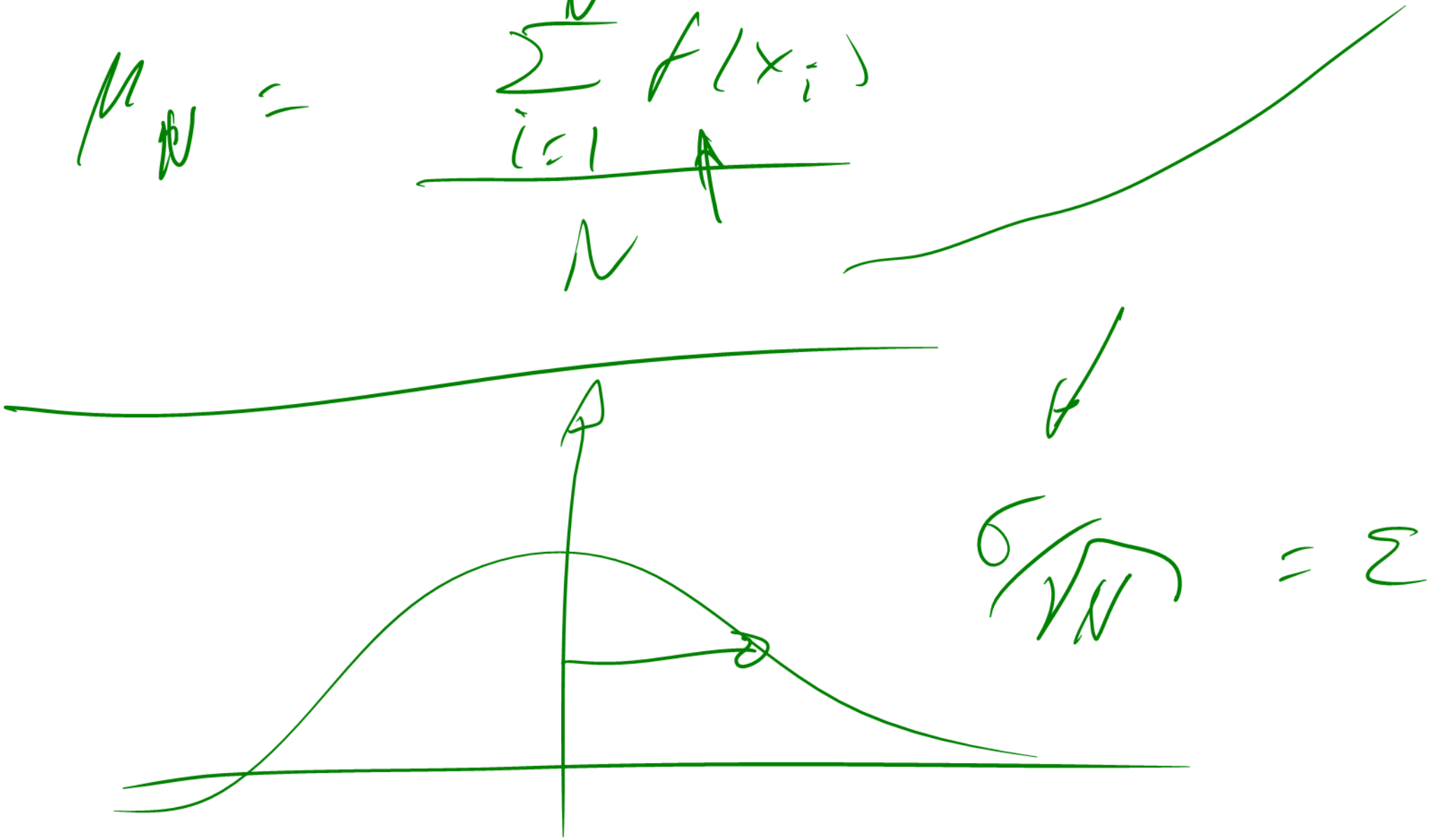
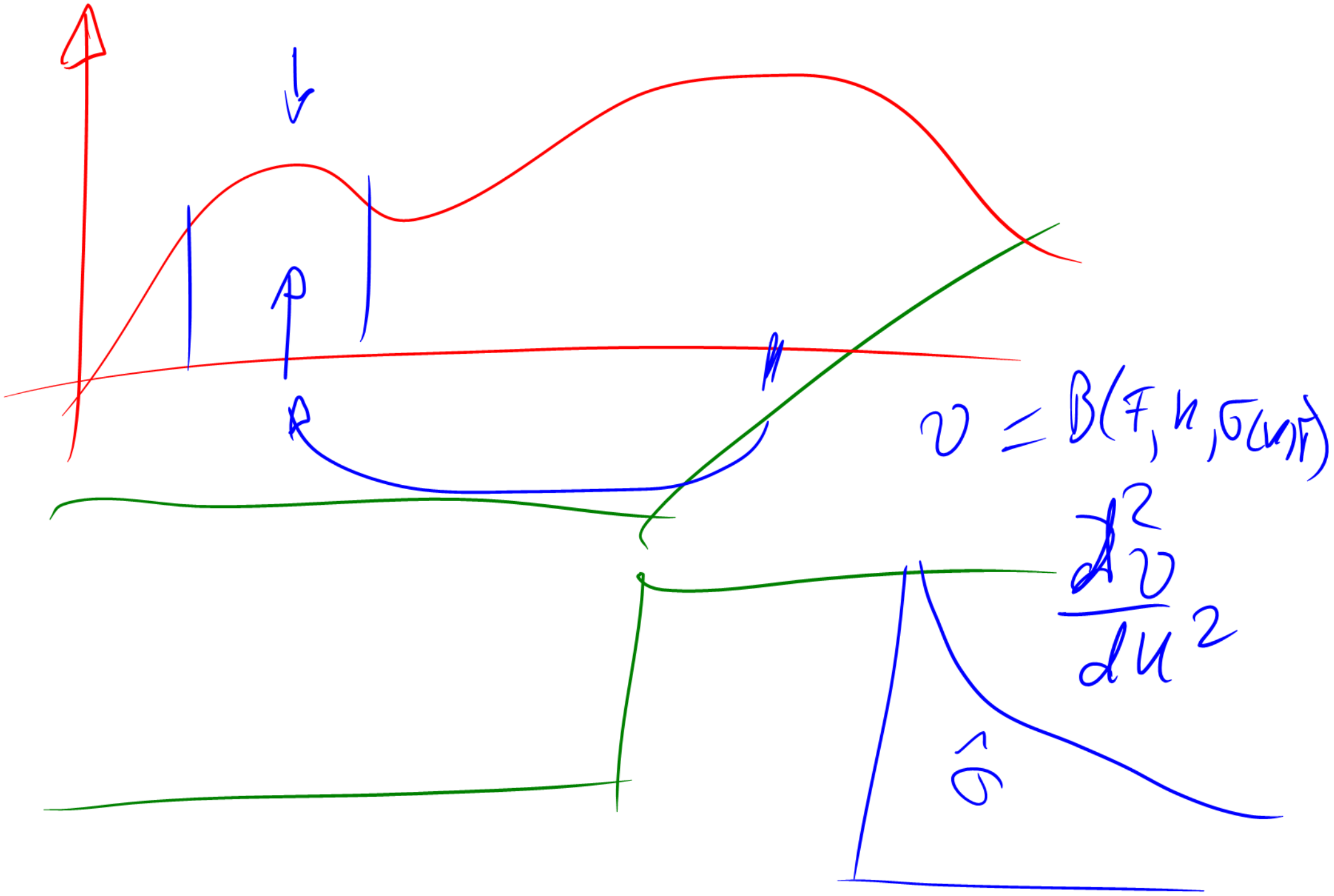
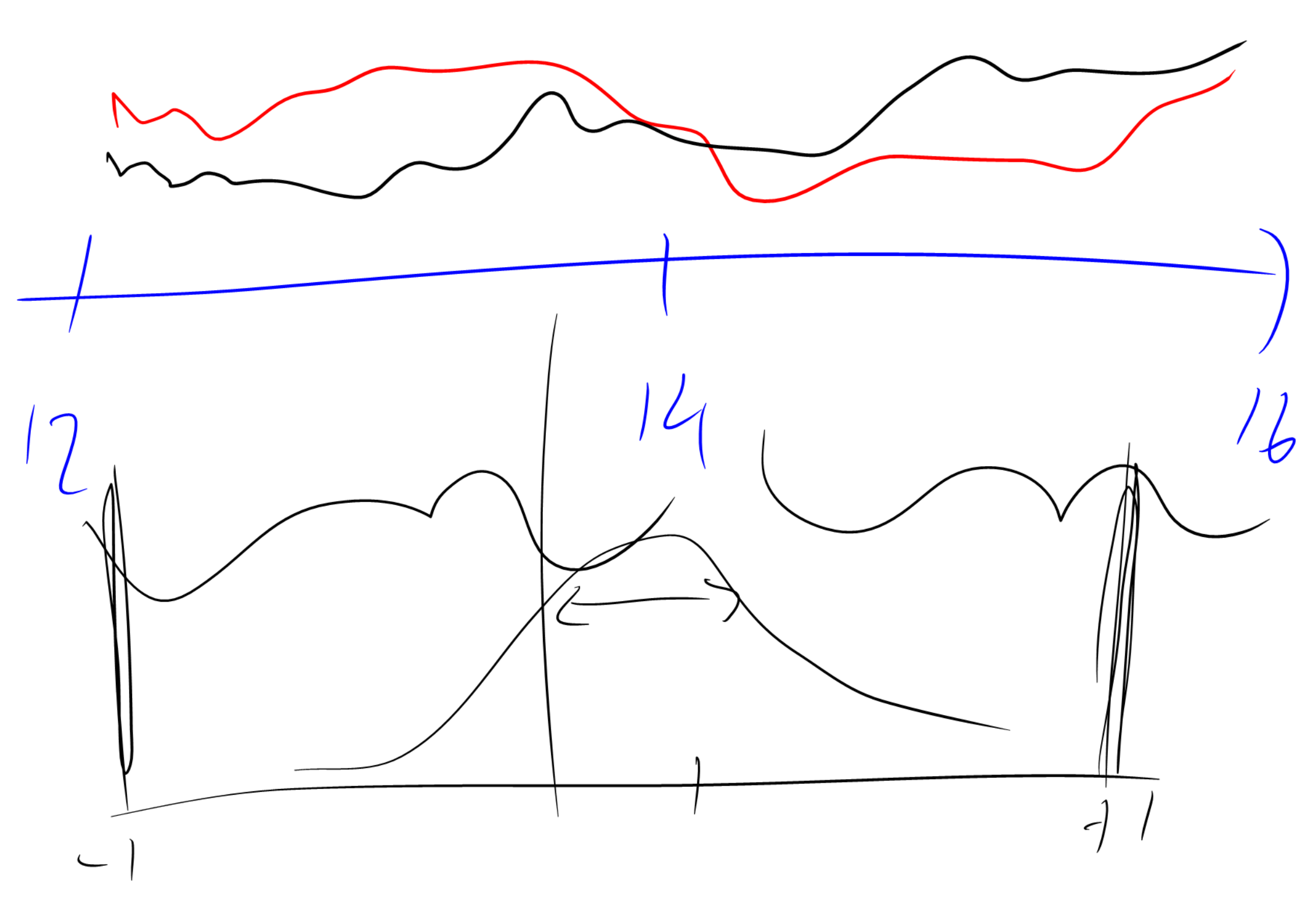
$$\mu_N = \frac{\sum_{i=1}^{N} f(x_i)}{N}$$

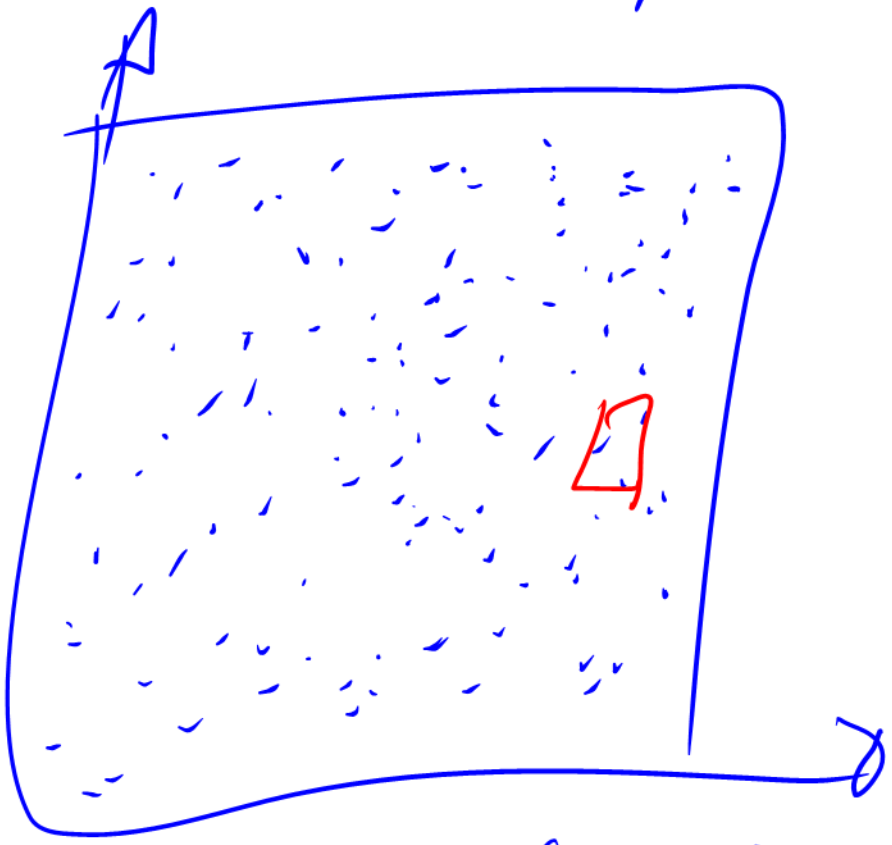


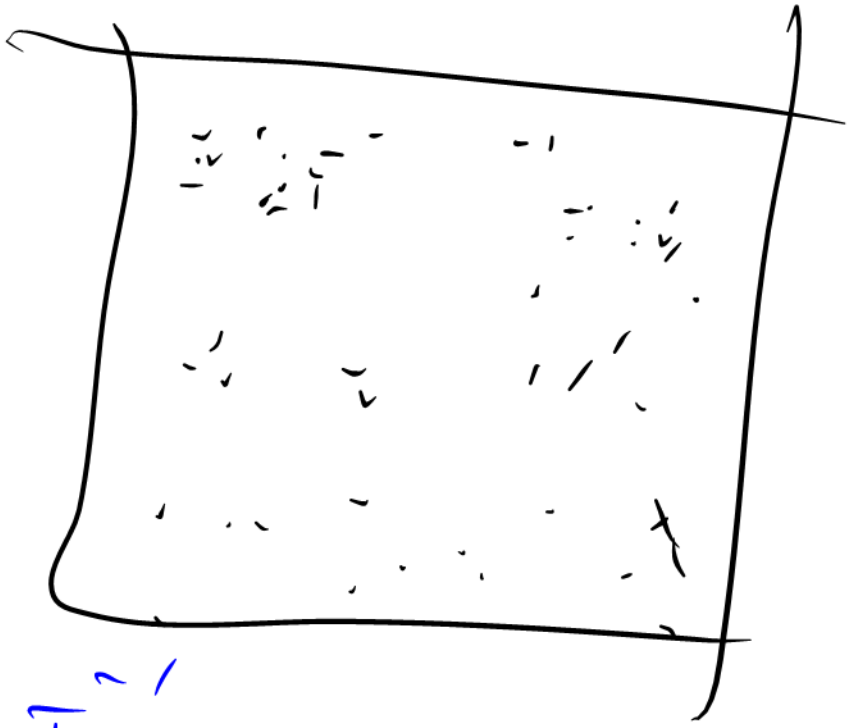
$$\frac{\sigma}{\sqrt{N}} = \Sigma$$


$v = B(F, K, \sigma(K,T))$
$\frac{d^2 v}{dK^2}$
$\hat{\sigma}$


12
14
16
-1
1
-1
1

$(x, y) \sim (u_x, u_y)$



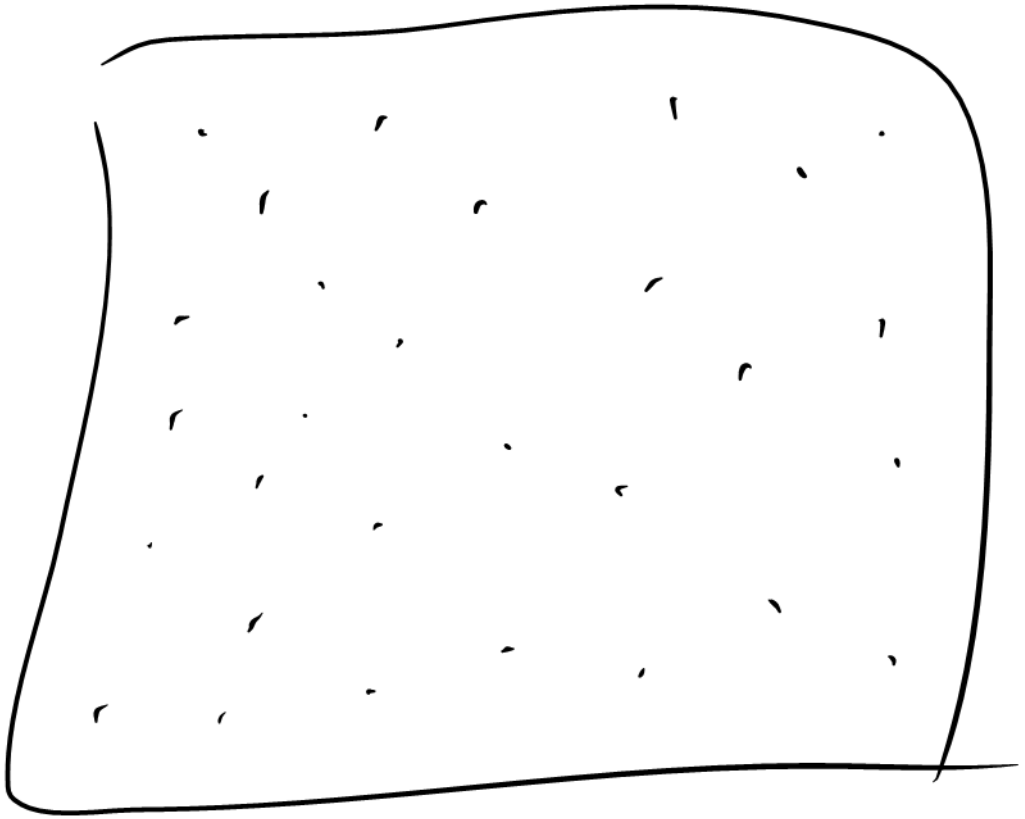


$u_x \to x = \psi_x^{-1}(u_x)$

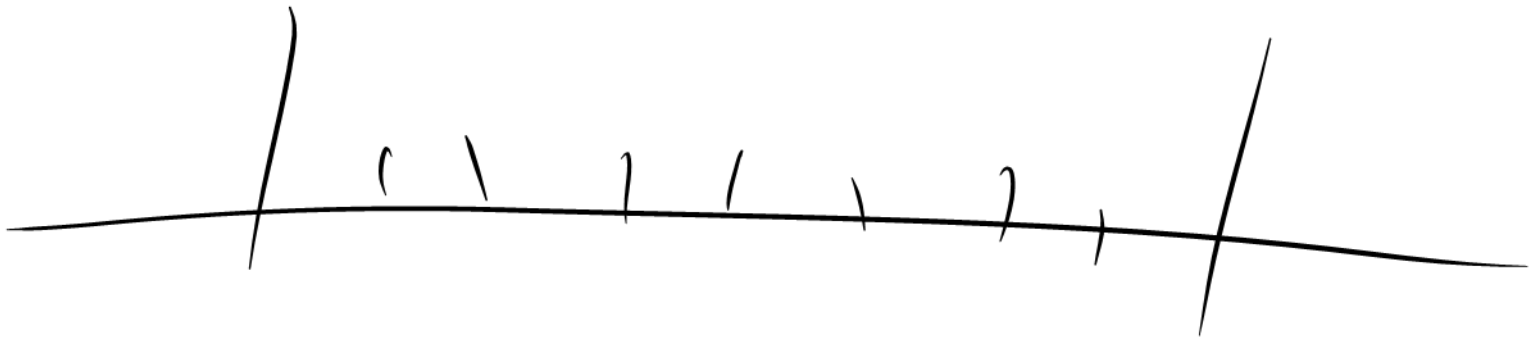
$\int g(r)\, dr$

$\frac{1}{\sqrt{N}}$

$\frac{\log(N)}{N}$



$2^n - 1$



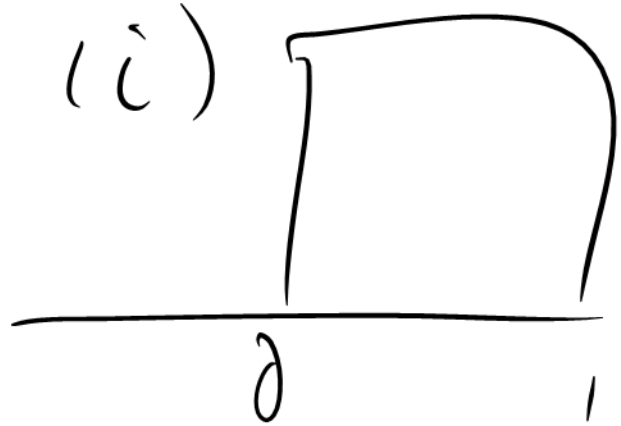
$\vec{x}$ $\qquad$ $\vec{x}$ $\qquad$ $\vec{u} \to \vec{z}$

$$\vec{x}' = A \cdot \vec{x}$$

$$i \to \vec{u}(i) \to \vec{z}$$

$$\vec{x}^T \cdot \vec{x}$$

$u_i(i)$

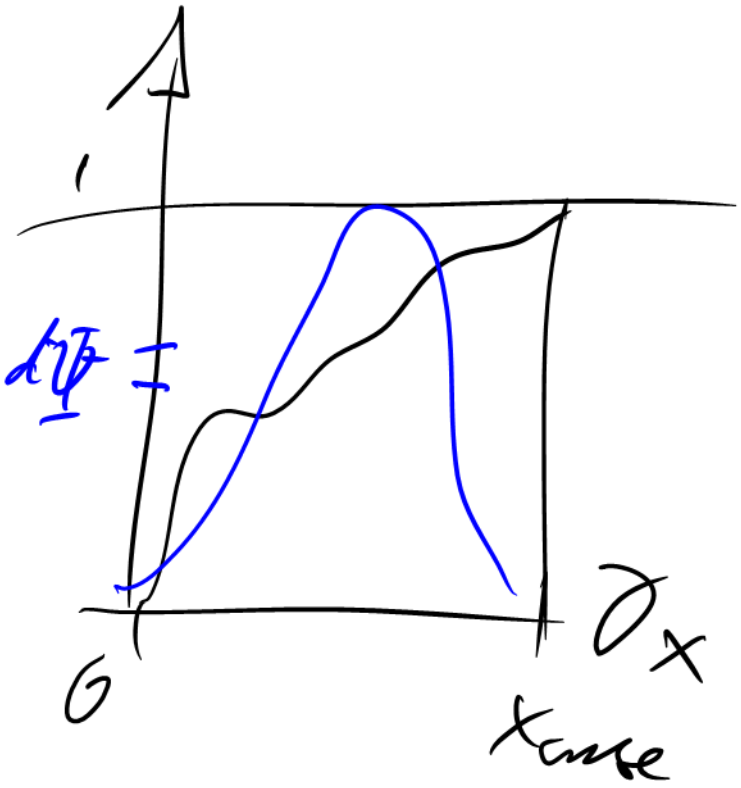


$\to$

$\Psi(x)$

$x = \Psi^{-1}(u)$

$u = \Psi(x)$



$du = d\Psi(x) = \psi(x)\,dx$

$1 \cdot du \qquad 1 \cdot du = \psi(x)\,dx$

$\psi(x)$

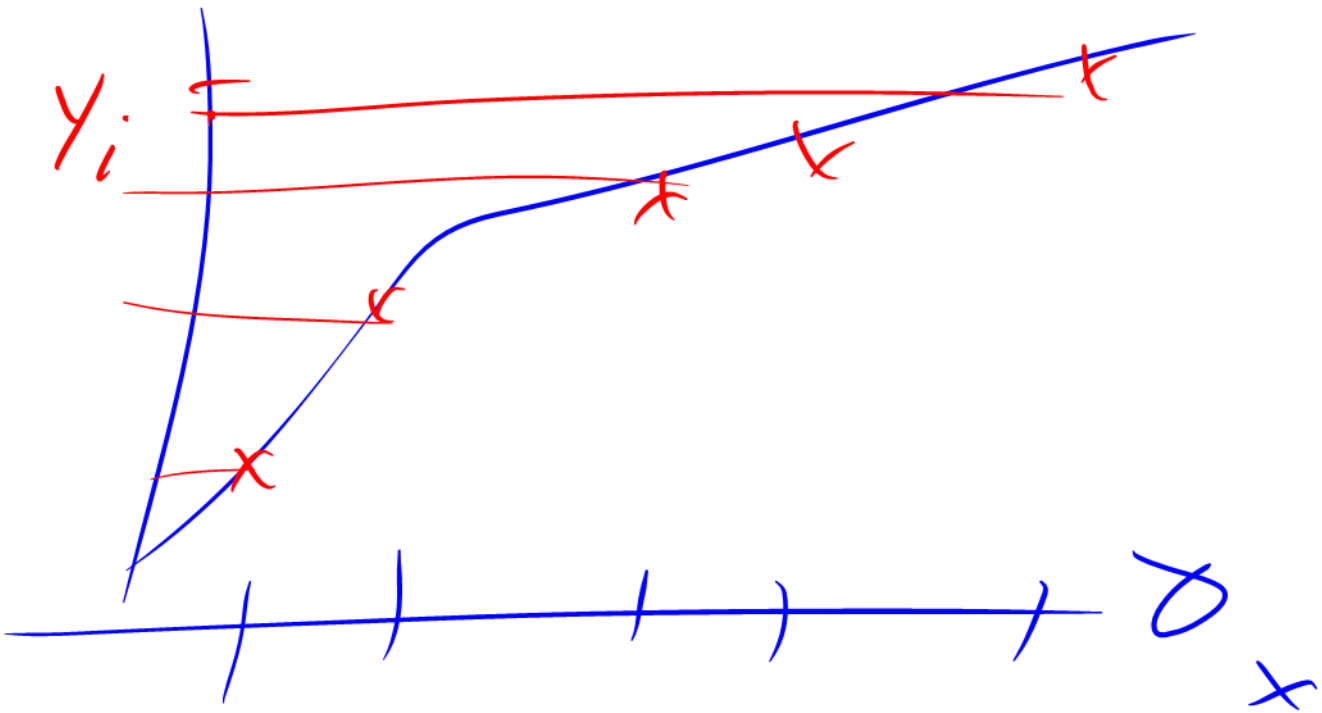
$y \rightarrow x(y)$

$\uparrow u$

(x_i, y_i)

$x = ($ $)$

$y = ($ $)$



$$f = \delta \cdot A$$

$$E^{\mu(A)}\left[\frac{\delta \cdot A}{A}\right] = E^{\mu(B)}\left[\frac{\delta \cdot A}{B}\right]$$

$$= E^{\mu(A)}[g]$$

$$\begin{pmatrix} y \\ \tilde{y} \end{pmatrix} = \begin{pmatrix} A \\ B \end{pmatrix}$$

z^*

$$u^* = \Phi(z^*) \qquad z^* = \Phi^{-1}(u^*)$$

$$z_i = \Phi^{-1}(u_i)$$

$$E[f] = u^* \cdot 0 + (1-u^*) \cdot E[f \mid z > z^*]$$

$$\tilde{u}_i = u^* + (1-u^*) \cdot u_i$$

$$\tilde{z}_i = \Phi^{-1}(\tilde{u}_i)$$