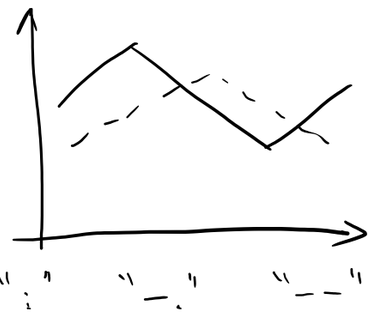
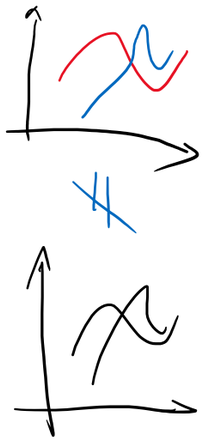
Notes, Mar 10th, 2021

Line plot — use different line types



"-" ":" "-." "--"

instead of



Linear Regression

Econ

$Y = X\beta + \varepsilon$

$L = \min_{\beta} (Y - X\beta)'(Y - X\beta)$

$\frac{\partial L}{\partial \beta} = 0 \Rightarrow \frac{\partial L}{\partial \beta} = 2 \cdot X' \cdot (Y - X\beta) = 0$

$\Downarrow$

$X'Y = X'X \cdot \beta \Rightarrow \beta = (X'X)^{-1} X'Y$

Stats / CS

$L = \min_{\beta} (Y - X\beta)'(Y - X\beta)$

$\Downarrow$

one of the loss functions

analytical solution

want to find β'.

$\min_{\beta}$ loss $\Leftarrow$ gradient descent

$\beta_{t+1} = \beta_t - \alpha \nabla \beta_t$

approximated