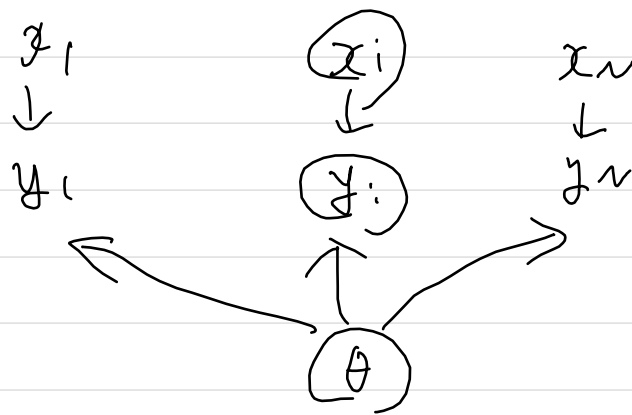


1FA_Q2 MLE

$$y_i = f_\theta(x_i) + \varepsilon_i \quad \text{where} \quad \varepsilon_i \sim \mathcal{N}(0, \sigma^2)$$

6 (a) $\mathcal{N} = \{(x_1, y_1) \dots (x_n, y_n)\}$

examples in $\mathcal{N}$ independent?



it depends on x_i 's distribution

$$\text{if } x_i \sim p(x_i | x_{i-1})$$

(x_i, y_i) $\forall_i$ is not independent
each other.

$$\text{if } x_i \sim U[\alpha, \beta]$$

(x_i, y_i) $\forall_i$ is independent.

$$y_i = f_0(x_i) + \varepsilon \quad \text{where } \varepsilon \sim N(0, \sigma^2)$$

σ^2 is fixed

then samples in $\mathcal{D} = \{(x_i, y_i) \dots\}$
 is independent and
 identically distributed.

ex. ε_i の確率分布が
 他の ε_j と同じ確率分
 布 (identically)
 ε_i と ε_j は互いに独立