

# Statistical Learning with Math and R

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The modification will be made in <https://github.com/prof-joe>

## Chap. 1

1. P5 Fig. 1.1:  $x$  should be at the axis (Right Figure)
2. Remove  $/(sum(X[,j])*X[,j])$

## Chap. 2

1. P45 Equation:

$$\begin{aligned} & -2 \sum_{i:y_i=1} \log(1 + \exp\{-(\hat{\beta}_0 + x_i \hat{\beta})\}) - 2 \sum_{i:y_i=-1} \log(1 + \exp\{\hat{\beta}_0 + x_i \hat{\beta}\}) \\ \rightarrow & \quad 2 \sum_{i:y_i=1} \log(1 + \exp\{-(\hat{\beta}_0 + x_i \hat{\beta})\}) + 2 \sum_{i:y_i=-1} \log(1 + \exp\{\hat{\beta}_0 + x_i \hat{\beta}\}) \end{aligned}$$

2. Proposition 1 (P47, 61):  $\pi_{k,i} := \rightarrow \pi_{i,k} :=$

## Chap. 4

1. Proposition 12 (P122, 134):  $\hat{\beta} = y - D^T \hat{\alpha} \rightarrow \hat{\beta} = (X^T X)^{-1} (X^T y - D^T \hat{\alpha})$

## Chap. 6

1. P206 L9:  $L = u_k^T X v_k - \mu(u_k^T u_k - 1) \rightarrow L = u_k^T X v_k - \mu(u_k^T u_k - 1) - \lambda(\sum_{j=1}^{k-1} u_j u_k^T)^2$