$$\mathbf{y} = f(\mathbf{x}) + \boldsymbol{\epsilon},\ \ f(\mathbf{x}) = \mathbf{X}\boldsymbol{\beta}$$

$$y_i = \sum_j X_{ij}\beta_j + \epsilon_i$$

$$\langle y_i \rangle = \left\langle \sum_j X_{ij}\beta_j \right\rangle + \langle \epsilon_i \rangle$$

$$\left\langle \sum_j X_{ij}\beta_j \right\rangle = \sum_j X_{ij}\beta_j = \mathbf{X}_{i,*}\boldsymbol{\beta}$$

$$\langle \epsilon_i \rangle = 0 \text{ siden } \epsilon_i \sim N\big(\mu = 0,\ \sigma^2\big)$$

$$\langle y_i \rangle = \mathbf{X}_{i,*}\boldsymbol{\beta}$$