$$Y \approx \beta_0 + \beta_1 X$$

$$\hat{y} \approx \hat{\beta}_0 + \hat{\beta}_1 x$$

$$(x_1, y_1), (x_2, y_2), ..., (x_n, y_n)$$

$$RSS = e_1^2 + e_2^2 + ... + e_n^2$$

$$RSS = (y_1 - \hat{\beta}0 - \hat{\beta}_1 x_1)^2 + (y_2 - \hat{\beta}_0 - \hat{\beta}_1 x_2)^2 + ... + (y_n - \hat{\beta}_0 - \hat{\beta}_1 x_n)^2.$$

$$\hat{\beta}_1 = \frac{\sum_{i=1}^{n}(xi - \bar{x})(yi - \bar{y})}{\sum_{i=1}^{n}(xi - \bar{x})^2}$$

$$\hat{\beta}_0 - \bar{y} - \hat{\beta}_1 \bar{x}$$