

$$\sum_{i=1}^n y_i$$

$$F(x) = a_0 + a_1 \cdot x$$

$$G^2(a_0, a_1) = \sum_{i=1}^n (y_i - F(x_i))^2 \rightarrow \min$$

$$= \sum_{i=1}^n (y_i - a_0 - a_1 \cdot x_i)^2$$

$$\frac{\partial G^2}{\partial a_0} = -2 \sum_{i=1}^n (y_i - a_0 - a_1 \cdot x_i) = 0$$

$$\frac{\partial G^2}{\partial a_1} = -2 \sum_{i=1}^n (y_i - a_0 - a_1 \cdot x_i) x_i = 0$$

Следует уравнение $a_0 + a_1 \cdot x_i = 0$ для каждого $i = 1, \dots, n$

$$a_0 \cdot n + a_1 \cdot \sum_{i=1}^n x_i = \sum_{i=1}^n y_i$$

$$a_0 \cdot \sum_{i=1}^n x_i + a_1 \cdot \sum_{i=1}^n x_i^2 = \sum_{i=1}^n y_i \cdot x_i$$

$$2) y = a_0 + a_1 \cdot \ln x$$

$$x = \ln x \quad y = a_0 + a_1 \cdot x$$

$$\{y_i\}, \{x_i\} \rightarrow \{\ln x_i\} \quad i = 1 \dots n$$

$$3) y = a_0 + a_1 \cdot \frac{1}{x}$$

$$x = \frac{1}{x} \quad y = a_0 + a_1 \cdot x$$

$$\{y_i\}, \{x_i\} \rightarrow \{\frac{1}{x_i}\} \quad i = 1 \dots n$$

$$4) y = a_0 \cdot x^a$$

$$\ln y = \ln(a_0 \cdot x^a) = \ln a_0 + \ln x^a = \ln a_0 + a \cdot \ln x$$

$$y = \ln y \quad A_0 = \ln a_0 \quad A_1 = \ln a_1 \quad y = f_0 + f_1 x$$

$$\{x_i\}, \{y_i\} \rightarrow \{\ln(y_i)\} \quad i = 1 \dots n$$

$$a_0 = e^{A_0} \quad a_1 = e^{A_1}$$

$$5) y = a_0 \cdot x^{a_1}$$

$$\ln y = \ln a_0 \cdot x^{a_1} = \ln a_0 + \ln x^{a_1} = \ln a_0 + a_1 \cdot \ln x$$

$$y = \ln y \quad x = \ln x \quad A_0 = \ln a_0 \quad y = f_0 + f_1 x$$

$$\{y_i\} \rightarrow \{\ln y_i\}, \{x_i\} \rightarrow \{\ln x_i\} \quad a_0 = e^{A_0}$$

$$6) y = e^{a_0 + a_1 \cdot x}$$

$$\ln y = \ln e^{a_0 + a_1 \cdot x} = a_0 + a_1 \cdot x$$

$$y = \ln y \quad x = \frac{1}{x} \quad y = a_0 + a_1 \cdot x$$

$$\{y_i\} \rightarrow \{\ln y_i\}, \{x_i\} \rightarrow \{\frac{1}{x_i}\} \quad i = 1 \dots n$$

$$7) y = \frac{1}{a_0 + a_1 \cdot x}$$

$$\frac{1}{y} = a_0 + a_1 \cdot x$$

$$y = \frac{1}{y} \quad y = a_0 + a_1 \cdot x$$

$$\{x_i\}, \{y_i\} \rightarrow \{\frac{1}{y_i}\}$$

$$8) y = \frac{1}{a_0 + a_1 \cdot \ln x}$$

$$\frac{1}{y} = a_0 + a_1 \cdot \ln x$$

$$y = \frac{1}{y} \quad y = a_0 + a_1 \cdot x$$

$$\{x_i\}, \{y_i\} \rightarrow \{\frac{1}{y_i}\}$$

$$9) y = \frac{x}{a_0 + a_1 \cdot x}$$

$$\frac{1}{y} = \frac{a_0 + a_1 \cdot x}{x} = a_0 \cdot \frac{1}{x} + a_1$$

$$y = \frac{1}{y} \quad y = a_0 \cdot x + a_1$$

$$y = f_0 + f_1 \cdot x \quad a_0 = f_0, \quad a_1 = f_1$$

$$\{y_i\} \rightarrow \{\frac{1}{y_i}\}, \{x_i\} \rightarrow \{\frac{1}{x_i}\}$$