$E = \frac{1}{n}\sum^{n}(y_i - (mx_i + c))^2$

$\frac{1}{n}\sum y_i^2 - 2y_i(mx_i + c) + (mx_i + c)^2$

$\frac{1}{n}\sum y_i^2 - 2y_i mx_i - 2y_i c + m^2x_i^2 + 2mx_i c + c^2$

$\frac{1}{n}\sum^{n} -2yix_i + 2mx_i^2 + 2x_i c$

$\frac{1}{n}\sum_{n}^{n}(y_i - \bar{y}) \cdot -2x_i \qquad \frac{1}{n}\sum^{n}(y_i - \bar{y}) \cdot -2 = \delta c$

$\frac{-2}{n}\sum^{n} x_i(y_i - \bar{y}) = \delta m$

$E = \frac{1}{n}\sum^{n}(y_i - (ax^2 + bx + c))^2$

$\frac{1}{n}\sum^{n}(y_i - \bar{y}) \cdot -2x^2 = \delta a$

$\frac{1}{n}\sum^{n}(y_i - \bar{y}) \cdot -2x = \delta b$

$\frac{1}{n}\sum^{n}(y_i - \bar{y}) \cdot -2 = \delta c$

$E = \frac{1}{n}\sum^{n}(y_i - (ae^{Bx} + c))^2$

$\delta a = \frac{1}{n}\sum(y_i - \bar{y})e^{Bx} \cdot -2$

$\delta b = \frac{1}{n}\sum(y_i - \bar{y})axe^{Bx} \cdot -2$

$\delta c = \frac{1}{n}\sum(y_i - \bar{y}) \cdot -2$

$E = \frac{1}{n}\sum^{n}(y_i - (ae^{Bx} + c))^2$

$E = \frac{1}{n}\sum^{n}(\ln(y_i - c) - \ln(ae^{Bx}))^2$

$E = \frac{1}{n}\sum^{n}(\ln(y_i - c) - \delta + Bx)^2$

$E = \frac{1}{n}\sum^{n}(y_i - ae^{Bx})^2$

$E = \frac{1}{n}\sum^{n}(\ln y - \ln a + -Bx)^2$

$\delta a = (\ln y_i - \bar{y}) \cdot -2$

$\delta b = (\ln y_i - \bar{y}) \cdot -2x$

$E = \frac{1}{n}\sum^{n}(y_i - a\sin(Bx + c))^2$

$\partial a = (y_i - \bar{y}) \cdot -2\sin(Bx + c)$

$\partial b = (y_i - \bar{y}) \cdot -2 \cdot x\cos(Bx + c)$

$\partial c = (y_i - \bar{y}) \cdot -2\cos(Bx + c)$

$$E = \sum_{i=1}^{n} (y_i - (ax_1^2 + bx_2^2 + cx_1x_2 + dx_2 + ex_1 + f))^2$$

$$\frac{\partial E}{\partial a} = \sum_{i=1}^{n} -2x_1^2 \cdot (y_i - (ax_1^2 + bx_2^2 + cx_1x_2 + dx_2 + ex_1 + f))$$

$$\frac{\partial E}{\partial b} = \sum_{i=1}^{n} -2x_2^2 \cdot (y_i - (ax_1^2 + bx_2^2 + cx_1x_2 + dx_2 + ex_1 + f))$$

$$\frac{\partial E}{\partial c} = \sum_{i=1}^{n} -2x_1x_2 \cdot (y_i - (ax_1^2 + bx_2^2 + cx_1x_2 + dx_2 + ex_1 + f))$$

$$\frac{\partial E}{\partial d} = \sum_{i=1}^{n} -2x_2 \cdot (y_i - (ax_1^2 + bx_2^2 + cx_1x_2 + dx_2 + ex_1 + f))$$

$$\frac{\partial E}{\partial e} = \sum_{i=1}^{n} -2x_1 \cdot (y_i - (ax_1^2 + bx_2^2 + cx_1x_2 + dx_2 + ex_1 + f))$$

$$\frac{\partial E}{\partial f} = \sum_{i=1}^{n} -2 \cdot (y_i - (ax_1^2 + bx_2^2 + cx_1x_2 + dx_2 + ex_1 + f))$$