$$\chi^2(a_0, a_1, a_2) = \sum_{i=1}^{n} \left(y_i - (a_0 + a_1 x_i + a_2 x_i^2)\right)^2$$

- la derivada de la suma es la suma de las derivadas

$$\frac{\partial \chi^2}{\partial a_0} = \sum_{i=1}^{n} -2 \left\{ y_i - [a_0 + a_1 x_i + a_2 x_i^2] \right\} = \sum 0$$

$$\Downarrow$$

$$\frac{\partial \chi^2}{\partial a_0} = \sum_{i=1}^{n} \left\{ -2 [y_i - (a_0 + a_1 x_i + a_2 x_i^2] = 0 \right\}$$

$$\Downarrow$$

$$\frac{\partial \chi^2}{\partial a_0} = \sum_{i=1}^{n} \left\{ [-y_i + a_0 + a_1 x_i + a_2 x_i^2] = \cancel{0}/2 \right\}$$

$$\Downarrow$$

$$\boxed{\frac{\partial \chi^2}{\partial a_0} = \sum_{i=1}^{n} \left\{ a_0 + a_1 x_i + a_2 x_i^2 = y_i \right\}}$$

$$\boxed{\frac{\partial X^2}{\partial a_0} = \sum_{i=1} \{a_0 + a_1 x_i + a_2 x_i^2 = y_i\}}$$

• Repitiendo el Procedimiento Para $\frac{\partial X^2}{\partial a_1}$ y $\frac{\partial X^2}{\partial a_2}$ se obtiene:

$$\frac{\partial X^2}{\partial a_1} = \sum_{i=1}^{n} -2(y_i - [a_0 + a_1 x_i + a_2 x_i^2])(x_i) = \sum 0$$

$$\Downarrow$$

$$\boxed{\frac{\partial X^2}{\partial a_1} = \sum_{i=1}^{n} \{a_0 x_i + a_1 x_i^2 + a_2 x_i^3 = y_i x_i\}}$$

$$\frac{\partial X^2}{\partial a_2} = \sum_{i=1}^{n} -2(y_i - [a_0 + a_1 x_i + a_2 x_i^2])(x_i^2) = \sum 0$$

$$\Downarrow$$

$$\frac{\partial X^2}{\partial a_2} = \sum_{i=1}^{n} [a_0 x_i^2 + a_1 x_i^3 + a_2 x_i^4 = y_i x_i^2\}$$