

Puntos teóricos

$$A. \begin{pmatrix} a_{11} & 0 & 0 & 0 & 0 \\ a_{21} & a_{22} & 0 & 0 & 0 \\ \vdots & & \ddots & \ddots & \vdots \\ a_{i1} & \dots & \dots & \dots & a_{ij} \end{pmatrix} \begin{pmatrix} x_1 \\ x_2 \\ \vdots \\ x_i \end{pmatrix} = \begin{pmatrix} b_1 \\ b_2 \\ \vdots \\ b_i \end{pmatrix}$$
$$\begin{aligned} a_{11} \cdot x_1 &= b_1 \\ a_{21}x_1 + a_{22}x_2 &= b_2 \\ x_2 &= \frac{b_2 - a_{21}x_1}{a_{22}} \\ x_i &= \frac{b_i - \sum_{j=0}^{i-1} a_{ij}x_j}{a_{ii}} \end{aligned}$$

$$5. \begin{pmatrix} a_{11} & a_{12} & a_{13} & \dots & a_{1j} \\ 0 & a_{22} & \dots & \dots & \vdots \\ 0 & 0 & a_{33} & \dots & \vdots \\ \vdots & \vdots & \vdots & \ddots & \vdots \\ 0 & 0 & 0 & \dots & a_{ij} \end{pmatrix} \begin{pmatrix} x_1 \\ x_2 \\ \vdots \\ x_i \end{pmatrix}$$

$$= \begin{pmatrix} b_1 \\ b_2 \\ b_3 \\ \vdots \\ b_i \end{pmatrix} \quad \begin{aligned} x_i a_{ij} &= b_i \\ x_i a_{i-1j} + x_{i-1} a_{i-1j-1} &= b_{i-1} \end{aligned}$$

$$x_{i-1} = \frac{b_{i-1} - x_i a_{i-1j}}{a_{i-1j-1}}$$

n = numero total de pilon

$$x_i = \frac{b_i - \sum_{j=i+1}^n x_j a_{ij}}{a_{ii}}$$

$$6. X^2(a_0, a_1) = \sum_{i=1}^n (y_i - (a_0 + a_1 x_i))^2$$

$$\frac{dX^2}{da_0} = 2(y_i - (a_0 + a_1 x_i))$$

$$(-1) = -2y_i + 2a_0 + 2a_1 x_i$$

$$\sum 2(a_0 + a_1 x_i - y_i) = 0$$

~~$a_0 =$~~

$$\sum a_0 = \sum -y_i + (+a_1 x_i)$$

$$na_0 = \sum y_i - a_1 \sum x_i$$

$$a_0 = \bar{y}_i - a_1 \bar{x}_i$$

$$\frac{dS^2}{da_1} = 2(y_i - a_0 - a_1 x_i) \cdot x_i$$

$$2(y_i - a_0 - a_1 x_i)(x_i) = 0$$

$$-y_i x_i + a_0 x_i + a_1 x_i^2 = 0$$

$$a_1 x_i^2 = y_i x_i - a_0 x_i$$

$$a_1 x_i^2 = y_i x_i - \left(\frac{\sum y_i}{n} - \frac{a_1 \sum x_i}{n} \right) x_i$$

$$a_1 x_i^2 = y_i x_i - \frac{\sum y_i \sum x_i}{n} + \frac{a_1 (\sum x_i)^2}{n}$$

$$a_1 \left(\sum x_i^2 - \frac{(\sum x_i)^2}{n} \right)$$

$$a_1 = \frac{y_i x_i - \frac{\sum y_i \sum x_i}{n}}{\sum x_i^2 - \frac{(\sum x_i)^2}{n}}$$

$$\bullet \sum_0^* 2(y_i - (a_0 + a_1 x_i + a_2 x_i^2))(-1) = 0$$

$$\sum a_0 + a_1 x_i + a_2 x_i^2 = y_i$$

$$\sum 2(y_i - (a_0 + a_1 x_i + a_2 x_i^2))(-x_i) = 0$$

$$\sum (-y_i x_i + a_0 x_i + a_1 x_i^2 + a_2 x_i^3) = 0$$

$$\sum a_0 x_i^2 + a_1 x_i^3 + a_2 x_i^4 = y_i x_i^2$$

La siguiente es igual pero en vez de $(-x_i)$ es $(-x_i^2)$