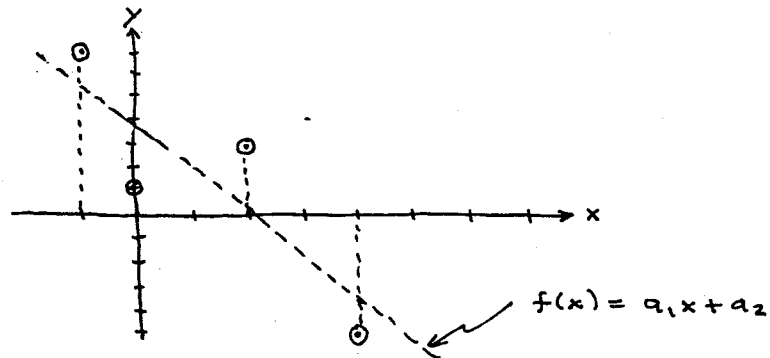


4 May 1994

ex: $(x_1, y_1) = (0, 1)$ $(x_2, y_2) = (2, 3)$ $(x_3, y_3) = (4, -5)$
 $(x_4, y_4) = (-1, 7)$ $N=4$



$$\sum_{i=1}^4 1 = 4 \quad \sum_{i=1}^4 x_i = 0 + 2 + 4 - 1 = 5$$

$$\sum_{i=1}^4 x_i^2 = 0^2 + 2^2 + 4^2 + (-1)^2 = 21$$

$$\sum_{i=1}^4 y_i x_i = 0 + 6 - 20 - 7 = -21$$

$$\sum_{i=1}^4 y_i = 1 + 3 - 5 + 7 = 6$$

$$\vec{a} = \frac{1}{21 \cdot 4 - 5 \cdot 5} \begin{bmatrix} 4 & -5 \\ -5 & 21 \end{bmatrix} \begin{bmatrix} -21 \\ 6 \end{bmatrix}$$

$$= \frac{1}{59} \begin{bmatrix} -84 & -30 \\ 105 & 126 \end{bmatrix} = \begin{bmatrix} -114/59 \\ 231/59 \end{bmatrix} = \begin{bmatrix} -1.93 \\ 3.91 \end{bmatrix}$$

$$\therefore f(x) = -1.93x + 3.91$$

x	$f(x)$
0	3.91
1	1.98
4	-3.81

check: plot of $f(x)$ above looks reasonable for least squares solution.