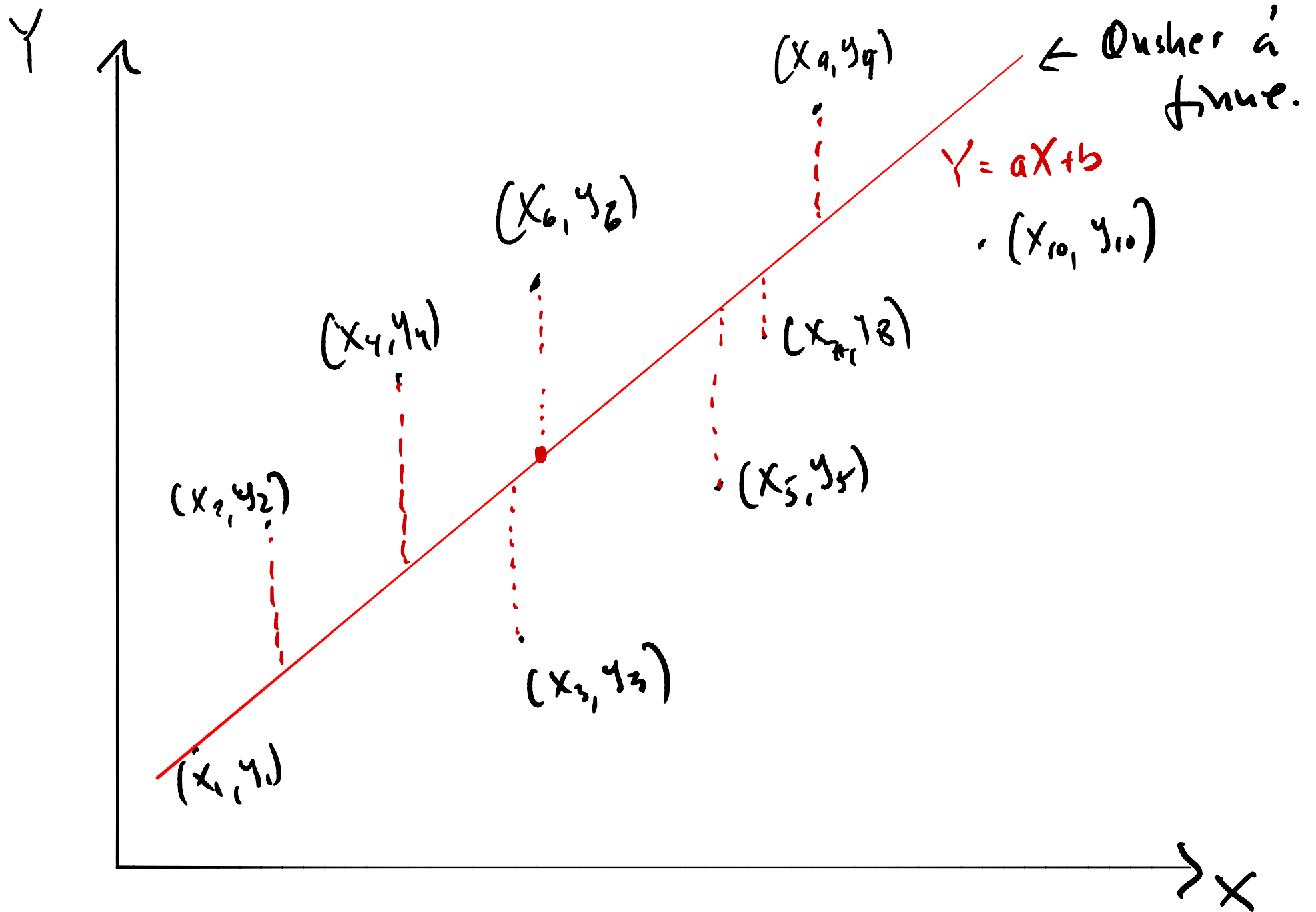
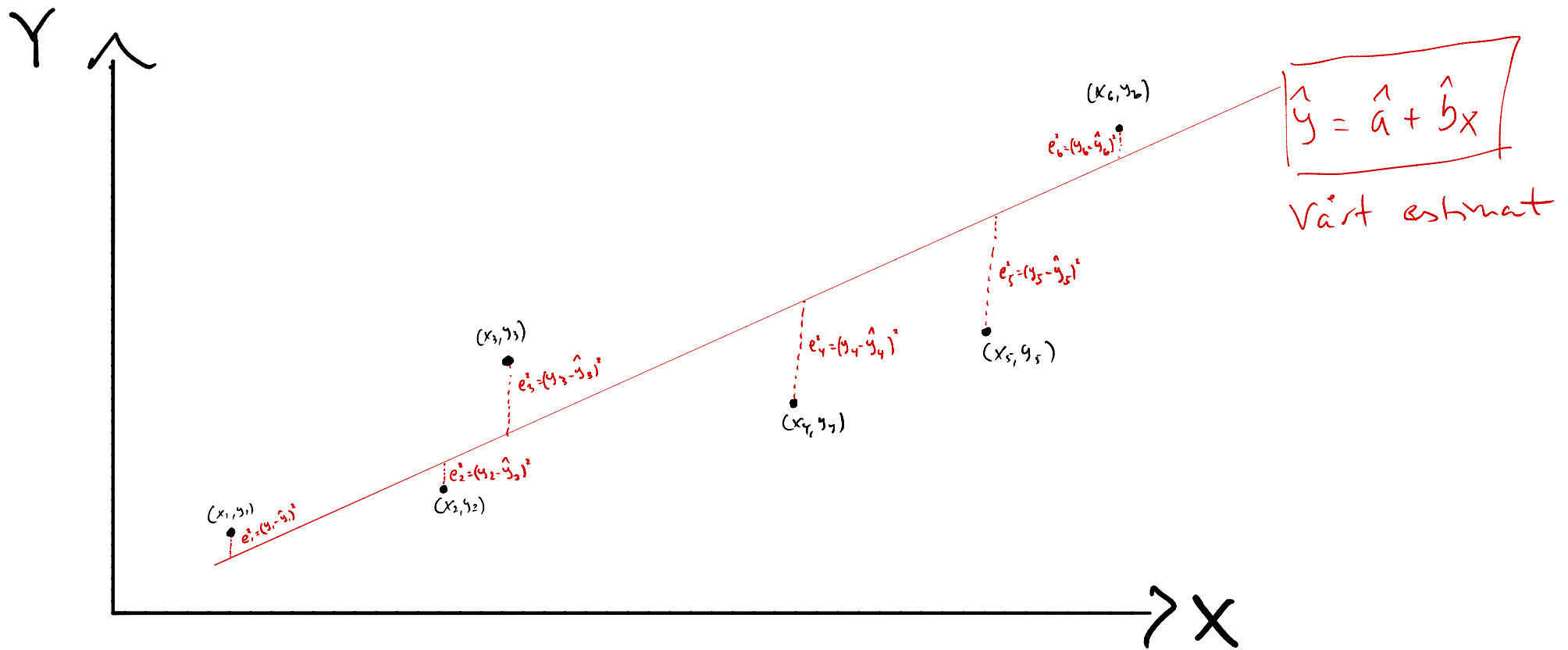






Mål:

Bestem $\hat{a}$, $\hat{b}$ slik at SSE er minimal.

Bestem $\hat{a}$, $\hat{b}$ slik at vi minimerer:

$$\begin{aligned}
 SSE &= e_1^2 + e_2^2 + e_3^2 + e_4^2 + e_5^2 + e_6^2 \\
 &= (y_1 - \hat{y}_1)^2 + (y_2 - \hat{y}_2)^2 + (y_3 - \hat{y}_3)^2 + (y_4 - \hat{y}_4)^2 + (y_5 - \hat{y}_5)^2 + (y_6 - \hat{y}_6)^2 \\
 &= (y_1 - \hat{a} - \hat{b}x_1)^2 + (y_2 - \hat{a} - \hat{b}x_2)^2 + (y_3 - \hat{a} - \hat{b}x_3)^2 + (y_4 - \hat{a} - \hat{b}x_4)^2 + (y_5 - \hat{a} - \hat{b}x_5)^2 + (y_6 - \hat{a} - \hat{b}x_6)^2 \\
 &= \sum_{i=1}^6 (y_i - \hat{a} - \hat{b}x_i)^2
 \end{aligned}$$

Matemahhh:

$$SSE(\underline{a}, b) = \sum_{i=1}^n (y_i - a - bx_i)^2$$

shal minimieren:

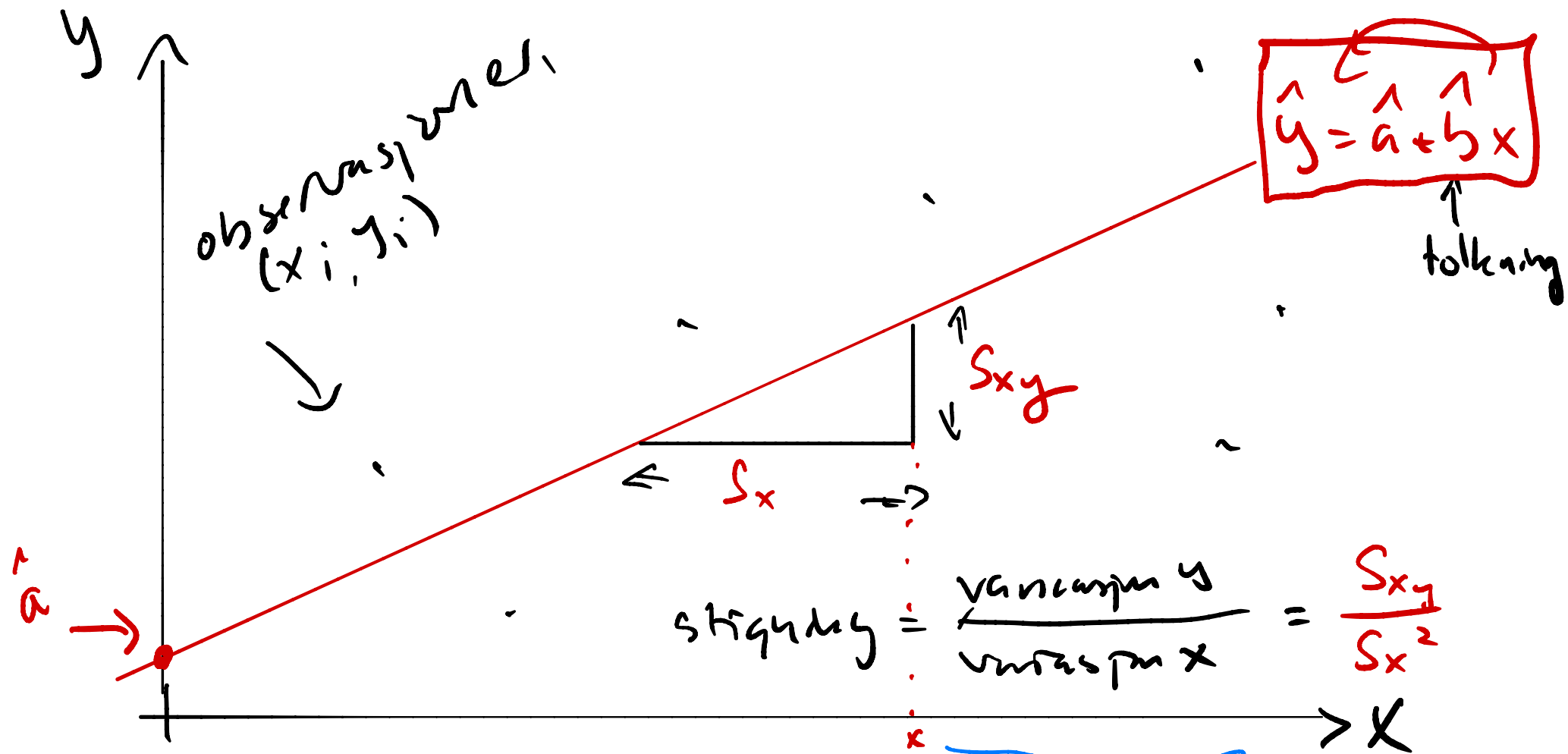
$$\frac{\partial SSE}{\partial a} = 0$$

$$\frac{\partial SSE}{\partial b} = 0$$

$$\hat{a} = \bar{y} - \hat{b} \bar{x}$$
$$\hat{b} = \frac{s_{xy}}{s_x^2}$$

algebra side 39b
(nicht klausurenrelevant)

sehr relevant.



$\hat{b}$ = stigningsfallet til linjen = $\hat{b} = \frac{S_{xy}}{S_x^2}$

$\hat{a}$ = skjæringspunkt i y-aksen = $\hat{a} = \bar{y} - \hat{b}\bar{x}$