

2

1

$$X=\{-3,-1,1,3\} \;\; Y=\{0,1,2,4\} \;\; y=ax+b$$

$$a \; b$$

$$\begin{aligned} a &= \frac{\sum (X_i - \bar{X})(Y_i - \bar{Y})}{\sum (X_i - \bar{X})^2}, \\ b &= \bar{Y} - a \cdot \bar{X}. \end{aligned}$$

$$y=0.65x+1.75$$

2

$$U_1,U_2,U_3 \;\; R_1,R_2,R_3 \;\; \text{A} \; V_A$$

A

$$\frac{U_1-V_A}{R_1}+\frac{U_2-V_A}{R_2}+\frac{U_3-V_A}{R_3}=0$$

$$\text{A } V_A$$

$$V_A=\frac{R_1R_2U_3+R_1R_3U_2+R_2R_3U_1}{R_1R_2+R_1R_3+R_2R_3}$$

3

$$R_1=10\;\mathrm{k}\Omega,\;R_2=50\;\mathrm{k}\Omega\;\;R_3\;\;I_3$$

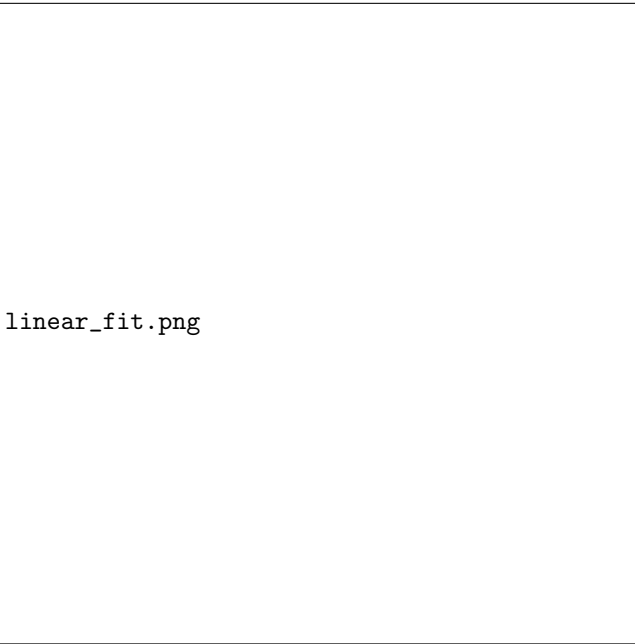


Figure 1:

$$= -\frac{R_2}{R_1} = -\frac{50\text{ k}\Omega}{10\text{ k}\Omega} = -5.0$$

$$R_3 \quad I_3$$

$$I_3 = -\frac{5 \cdot V_{in}}{R_3}$$

Ex.1

$$(x_i, y_i), i = 1, 2, \ldots, n \quad 2 \quad y = ax^2 + bx + c \quad a, b, c$$

$$2 \quad a, b, c \quad 2$$

$$y = 0.06x^2 + 0.65x + 1.44$$

Ex.2

$$U_A, U_B, U_C \quad R_1, R_2, R_3, R_4, R_5 \quad \text{AB} \quad E$$

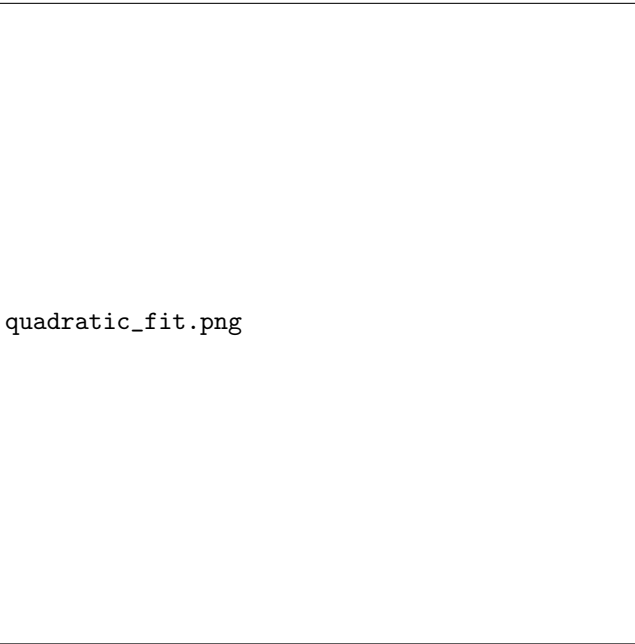


Figure 2: 2

AB E

$$E = f(U_A, U_B, U_C, R_1, R_2, R_3, R_4, R_5)$$

Ex.3

I_o

I_o

$$I_o = -\frac{5 \cdot V_{in}}{R_2}$$

Ex.4

A/D

$$= -\frac{R_5}{R_3} \left(1 + \frac{R_4}{R_2} \right) = -1.0$$