LAGRANGE

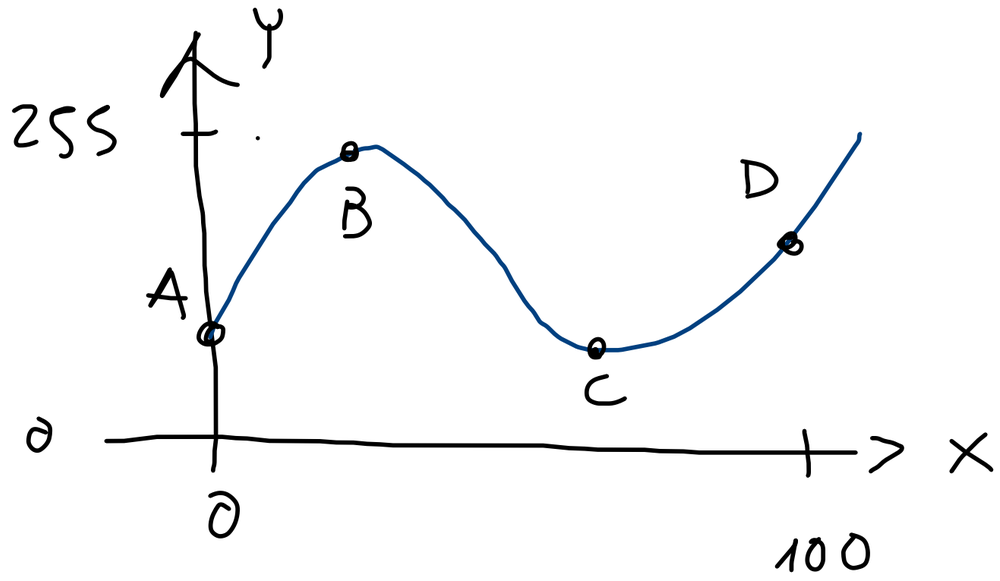
$P(x)$

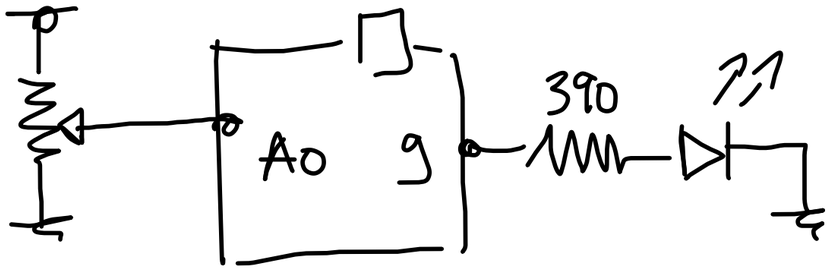
A 0 , 50

B 30 , 200

C 70 , 80

D 100 , 220





$\sim$ 0 – 100

(x)

$$P(x) = \sum_{i=0}^{3.1} y_i \; L_i(x) =$$

$$= y_0 \cdot \underbrace{L_0(x)}_{50} + \underbrace{y_1}_{200} \cdot L_1(x) \; \cdots$$

$$L_i(x) = \prod_{\substack{j=0 \\ j\neq i}}^{3} \frac{x - x_j}{x_i - x_j} = \prod_{\substack{j=0 \\ j\neq 0}}^{3} \frac{x - x_j}{x_0 - x_j} =$$

$\downarrow$

$i = 0$

$$= \frac{x - x_1}{x_0 - x_1} \cdot \frac{x - x_2}{x_0 - x_2} \cdot \frac{x - x_3}{x_0 - x_3} = \frac{x-30}{0-30} \cdot \frac{x-70}{0-70} \cdot \frac{x-100}{0-220}$$

$i = 1 \quad L_1(x) = \frac{x - x_0}{x_1 - x_0} \cdot \frac{x - x_2}{x_1 - x_2} \cdot \frac{x - x_3}{x_1 - x_3}$

A $0, 50$ B $30, 200$ C $70, 80$ D: $100, 220$

$x_0 \quad y_0$ $x_1 \quad y_1$