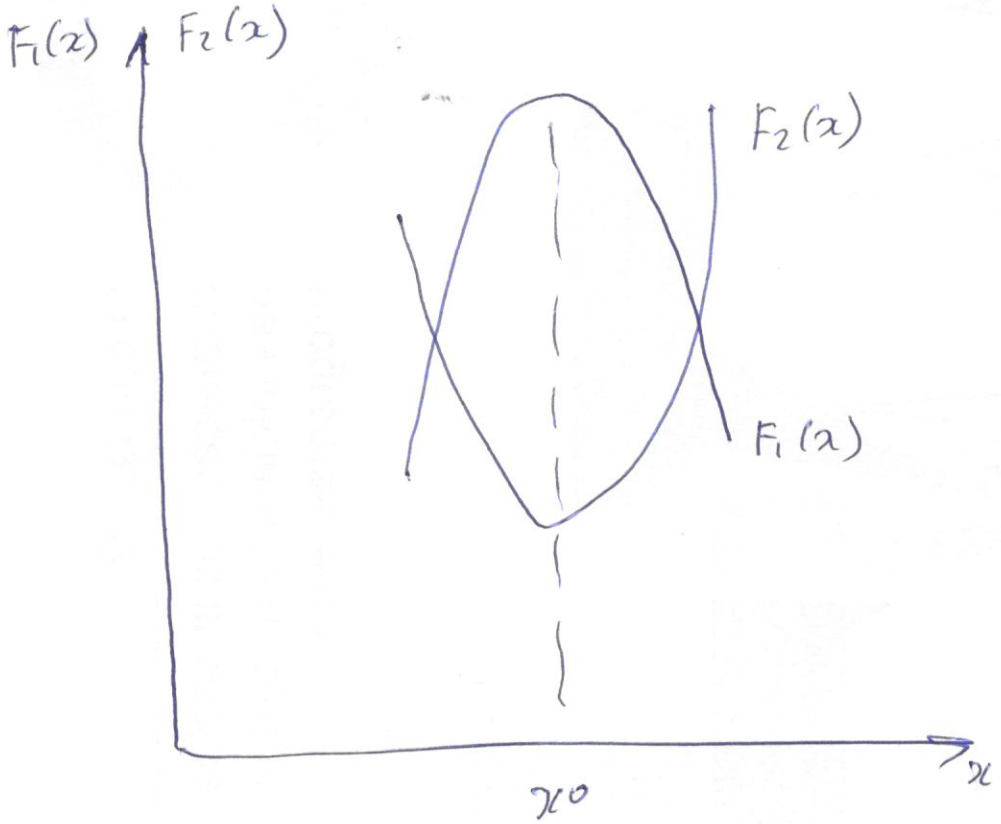


$F_1(x)$ $\quad$ $F_2(x)$ $\quad$ se $F_2(x) = -F_1(x)$

$\downarrow$ $\quad$ $\downarrow$

max $\quad$ min

$F_1(x) \longrightarrow \max$

$F_1(x^0) \geq F_1(x)$

$F_1(x^0) \geq F_1(x)$ $\quad \times (-1)$

$-F_1(x^0) \leq -F_1(x)$

$F_2(x^0) \leq F_2(x)$

$$F(x) = 2x_1 + 4x_1^2 - 3x_2 + 2x_2^2 - x_1x_2 + 3x_3 +$$

$$+ 4x_1x_3 + 5x_1x_4 + 8x_4^2 \longrightarrow \text{min}$$

$$x_1 - 4x_2 + 3x_3 - 7x_3 = 10$$

$$x_1 + 3x_2 - 7x_3 + 6x_3 = 8 \quad \times(-1)$$

$$x_1 - 4x_2 + 3x_3 - 7x_3 = 10$$

$$-x_1 - 3x_2 + 7x_3 - 6x_3 = -8$$

$$-7x_2 + 10x_3 - 13x_3 = 2$$

$$x_2 = \frac{2 - 10x_3 + 13x_3}{-7}$$

$$x_1 - 4x_2 + 3x_3 - 7x_3 = 10 \quad \times 3$$

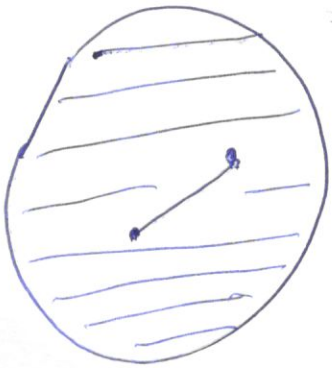
$$x_1 + 3x_2 - 7x_3 + 6x_3 = 8 \quad \times 4$$

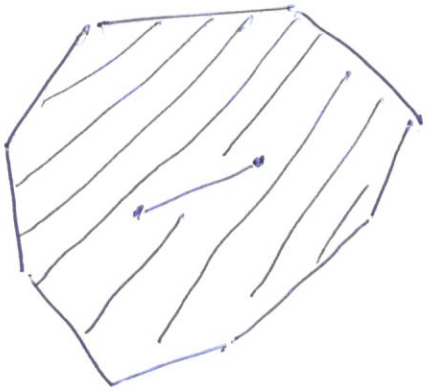
$$3x_1 + 12x_2 + 9x_3 - 21x_4 = 30$$

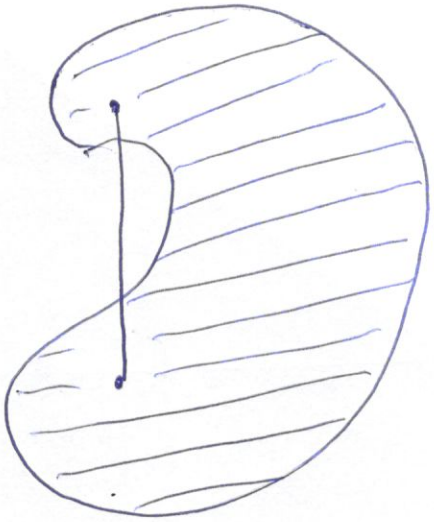
$$4x_1 + 12x_2 - 28x_3 + 24x_3 = 32$$

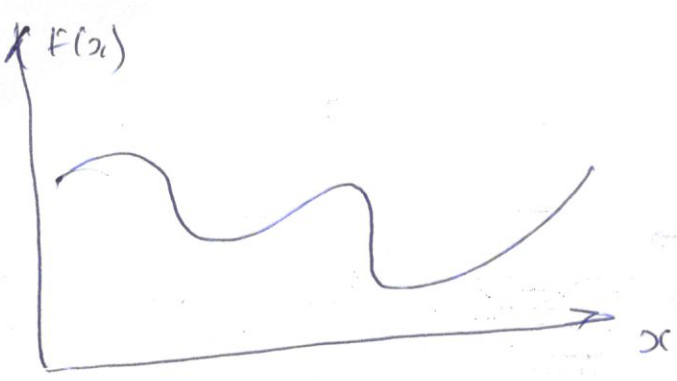
$$7x_1 - 19x_3 + 3x_3 = 62$$

$$x_1 = \frac{62 + 19x_3 + 3x_3}{7}$$








F(x)
x

Programação Quadrática

$$F(x) = a + \sum_{i=1}^{n} b_i x_i + \sum_{i=1}^{n} \sum_{j=} c_{ij} x_i x_j \rightarrow \min$$

$$\sum_{i=1}^{n} d x_{ji} \begin{matrix} \geq \\ \leq \\ = \end{matrix} h_j, \quad j = 1, 2, \ldots, m$$

Programação Dinâmica

FO deve ser separada

aditiva

$$F(x) = \sum_{i=1}^{n} f_i(x_i)$$

$$F(x) = \prod_{i=1}^{n} f_i(x_i)$$

multiplicativa

$$F(x) = 5x_1^{tg x_1} + 6x_2 e^{x_2}$$

$$F(x) = \left(5x_1^{tg x_1}\right) \cdot \left(6x_2 e^{x_1}\right)$$