

ESERCIZIO 1

a)  $U(x_1, x_2) = 4x_1 + 2x_2$  DOVE  $a_1 = 2$

IL SAGGIO MARGINALE DI SOSTITUZIONE È

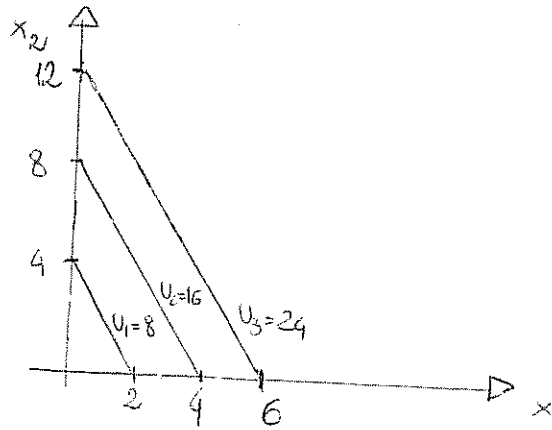
$$SMS = -\frac{4}{2} = -2$$

$$U = U_1 = 8 \rightarrow 4x_1 + 2x_2 = 8$$

$$U = U_2 = 16 \rightarrow 4x_1 + 2x_2 = 16$$

$$U = U_3 = 24 \rightarrow 4x_1 + 2x_2 = 24$$

LA RAPPRESENTAZIONE GRAFICA DELLE CURVE D'INDIFFERENZA È



b)  $M = 100$

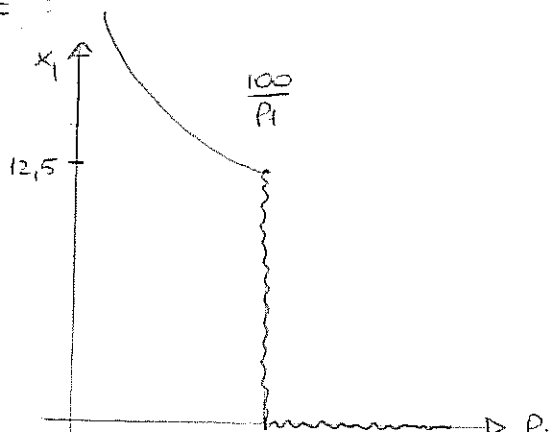
$$P_2 = 4$$

$$P_1 x_1 + 4x_2 = 100$$

$$SMS = -2 \quad -2 = -\frac{P_1}{4} \rightarrow P_1 = 8 \rightarrow x_1 \in [0, 12,5]$$

LA FUNZIONE DI DOMANDA, QUINDI, È:

$$8x_1 + 4x_2 = 100$$



c)  $P_1 = 10$

$P_2 = 4$

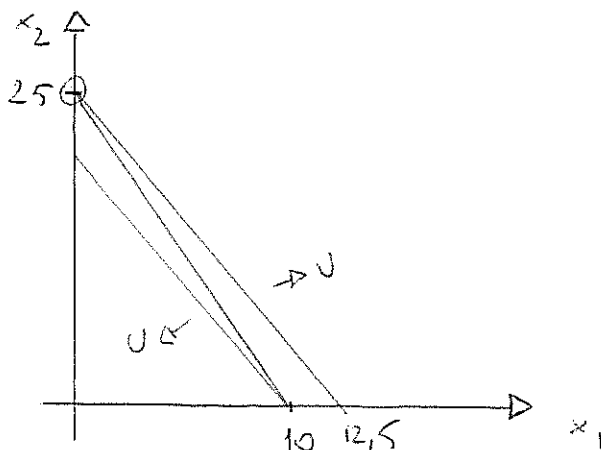
$M = 100$

→ VINEOLO DI BIANCO :

$10x_1 + 4x_2 = 100$

$|SHS| = \frac{4}{2} = 2$

$\left| \frac{P_1}{P_2} \right| = \frac{10}{4} = 2,5 > 2$



•  $4x_1 + 2x_2 = 50$

$x_1 = 0 \quad x_2 = 25$

$x_1 = 12,5 \quad x_2 = 0$

SOLO  $x_2 \Rightarrow$

$4x_2 = 100$

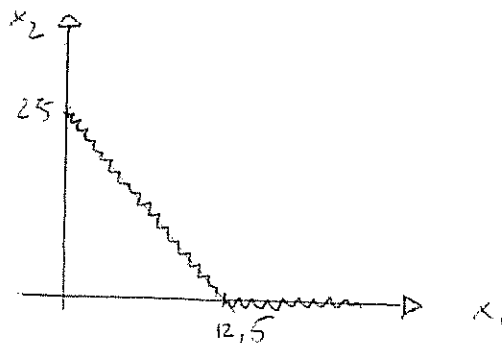
$x_2^* = 25$

d)

$P_2 = 4$

$M = 100$

$P_1 x_1 + 4x_2 = 100$



$P_1 = 8$

$\left( \frac{P_1}{P_2} = 2 \right)$

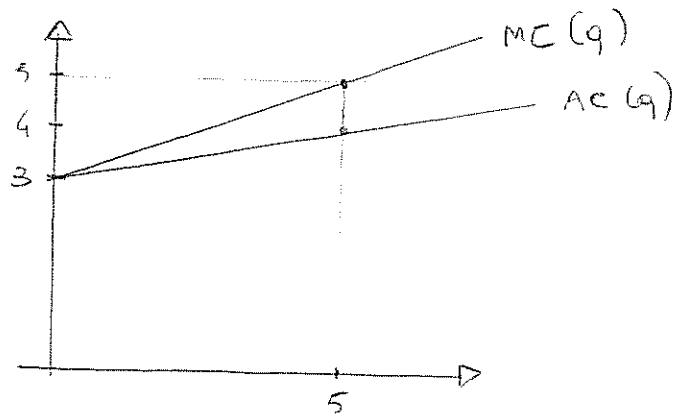
$8x_1 + 4x_2 = 100$

\* ESERCIZIO 2

$$\bar{C} = 3q + 0,2 q^2$$

a)  $AC(q) = \frac{C(q)}{q} = 3 + 0,2 q$  COSTO MEDIO

$MC(q) = \frac{dC(q)}{dq} = 3 + 0,4 q$  COSTO MARGINALE



FUNZIONE D'OFFERTA:

CONCORRENZA PERFETTA  $\Rightarrow$

$P = MC \Rightarrow$

$P = 3 + 0,4 q$

$q = \frac{P-3}{0,4}$

$q = 2,5P - 7,5$

$$q = \begin{cases} \frac{5}{2}P - \frac{15}{2} & P \geq 3 \\ 0 & P < 3 \end{cases}$$



$\rightarrow$   
q

b)  $N = 100$

$P = 50 - Q$

$Q = \sum_{i=1}^{100} q_i = N \cdot q$

$Q = 100 q$

$Q = \frac{500}{2}P - \frac{1500}{2}$

$P = 3 + \frac{2}{500} Q$

$$\begin{cases} P = 3 + \frac{2}{500} Q \\ P = 50 - Q \end{cases} \Rightarrow$$

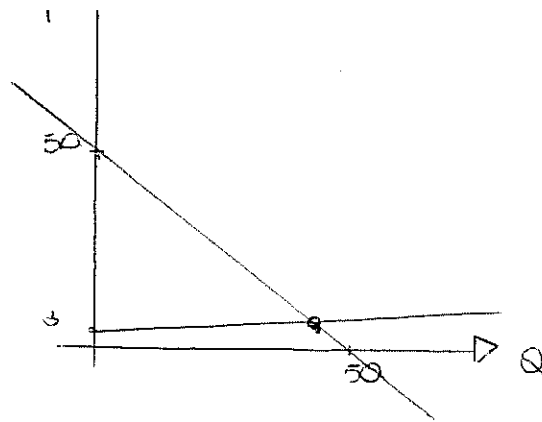
$50 - Q = 3 + \frac{2}{500} Q$

$Q^* = 46,8$

$\rightarrow q = \frac{46,8}{100} = 0,468$

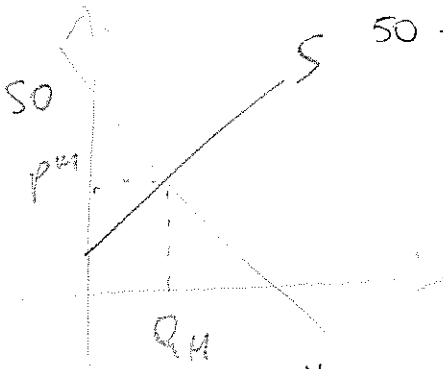
$P^* = 3,2$

$\pi_i = 3,2 \cdot 0,468 - (3 \cdot 0,468 + 0,2 (0,468)^2) = 0,05$



c) MONOPOLIO  $\rightarrow RH = MC$

$$R = P \cdot Q = (50 - Q) \cdot Q = 50Q - Q^2 \rightarrow RH = 50 - 2Q$$



$$50 - 2Q = 3 + 0,4Q$$

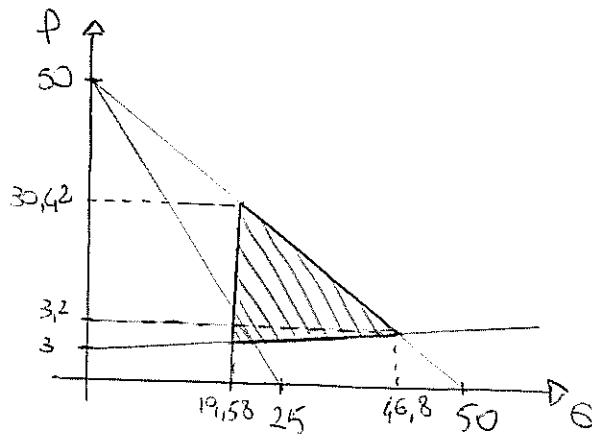
$$2,4Q = 47$$

$$Q^M = \frac{47}{2,4} = 19,58$$

$$P^M = 50 - Q = 30,42$$

$$\pi^M = 30,42 \cdot 19,58 - (3 \cdot 19,58 + 0,2 \cdot (19,58)^2) = 460,2$$

d)



PERDITA SECA :

$$(30,42 - 3,2) \left( \frac{46,8 - 19,58}{2} \right) = 370,46$$

ESERCIZIO 1

1)  $U(x_1, x_2) = 4x_1 + ax_2$  DOVE  $a = 8$

IL SAGGIO MARGINALE DI SOSTITUZIONE È:

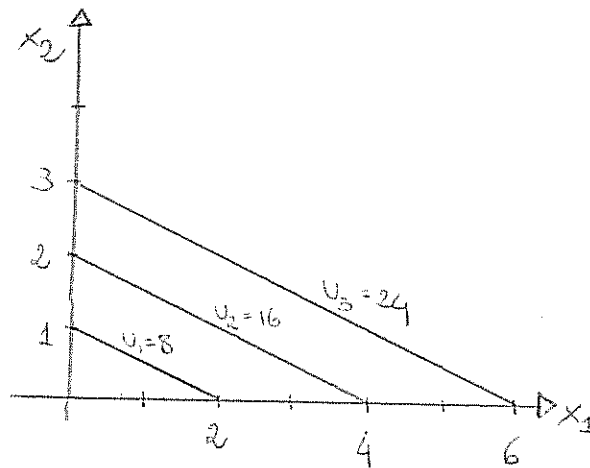
$$SMS = -\frac{4}{8} = -\frac{1}{2}$$

$$U = U_1 = 8 \rightarrow 4x_1 + 8x_2 = 8$$

$$U = U_2 = 16 \rightarrow 4x_1 + 8x_2 = 16$$

$$U = U_3 = 24 \rightarrow 4x_1 + 8x_2 = 24$$

LA RAPPRESENTAZIONE GRAFICA DELLE CURVE D'INDIFFERENZA È:



$$M = 160$$

$$P_2 = 4$$

$$P_1 x_1 + 4x_2 = 160$$

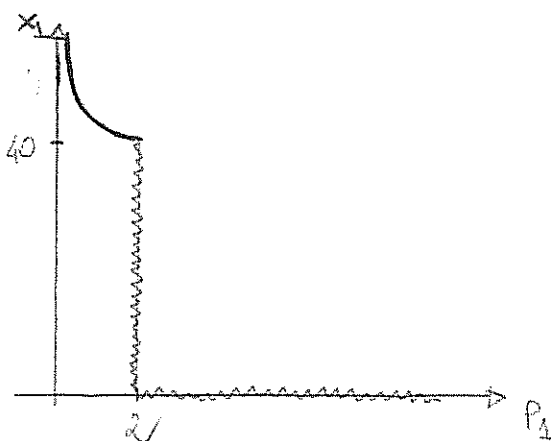
$$SMS = -\frac{1}{2} \Rightarrow -\frac{1}{2} = -\frac{P_1}{4} \Rightarrow P_1 = \frac{4}{2} = 2$$

LA FUNZIONE DI DOMANDA, QUINDI, È:

$$2x_1 + 4x_2 = 160$$

$$x_1 = 0 \rightarrow x_2 = 40$$

$$x_2 = 0 \rightarrow x_1 = 80$$



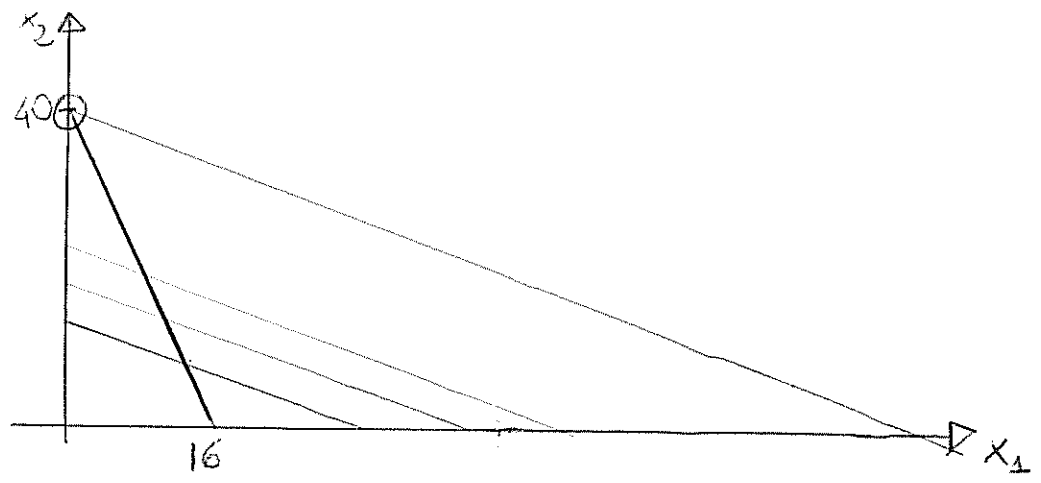
c)  $P_1 = 10$

$P_2 = 4$

$M = 160$

$\Rightarrow$  VINCOLO DI BILANCIO :  $10x_1 + 4x_2 = 160$

$-\frac{P_1}{P_2} = -\frac{10}{4} \Rightarrow \frac{P_1}{P_2} = -\frac{10}{4} = -\frac{5}{2} < -\frac{1}{2}$

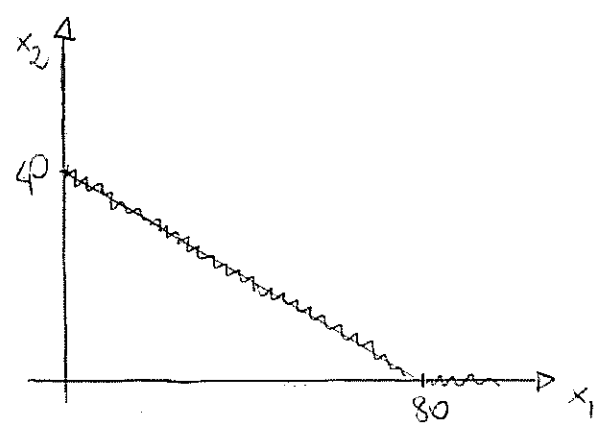


SOLO  $x_2 \Rightarrow 4x_2 = 160 \quad x_2^* = \frac{160}{4} = 40$

d)  $P_2 = 4$

$M = 160$

$P_1 x_1 + 4x_2 = 160$



$P_1 = 2 \quad \left( \frac{P_1}{P_2} = \frac{1}{2} \right)$

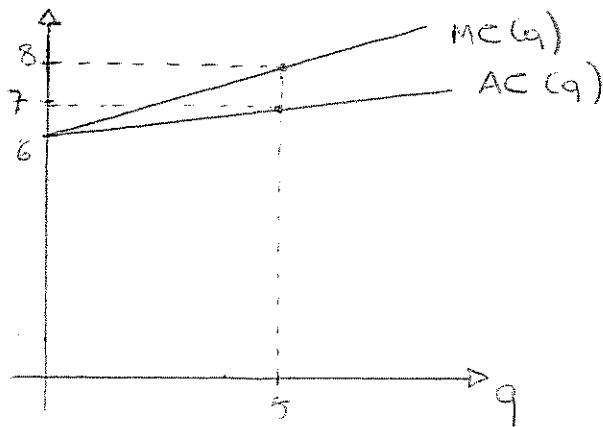
$2x_1 + 4x_2 = 160$

## ESERCIZIO 2

$$C = 6q + 0,2q^2$$

$$a) \quad AC(q) = \frac{C(q)}{q} = 6 + 0,2q \quad \text{COSTO MEDIO}$$

$$MC(q) = \frac{\partial C(q)}{\partial q} = 6 + 0,4q \quad \text{COSTO MARGINALE}$$



FUNZIONE D'OFFERTA:

$$\text{CONCORRENZA PERFETTA} \Rightarrow p = MC \Rightarrow p = 6 + 0,4q$$

$$q = \frac{p - 6}{0,4}$$

$$q = 2,5p - 15$$

$$q = \begin{cases} \frac{10}{4}p - \frac{60}{4} & p \geq 6 \\ 0 & p < 6 \end{cases}$$

$$N = 50$$

$$P = 50 - Q$$

$$Q = \sum_{i=1}^{50} q_i = Nq \quad Q = 50q \quad \Rightarrow \quad Q = 125p - 750$$

$$\begin{cases} Q = 125p - 750 \\ P = 50 - Q \end{cases} \Rightarrow$$

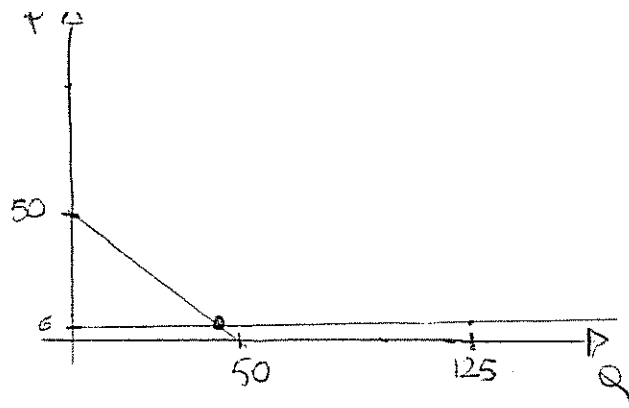
$$50 - p = 125p - 750$$

$$126p = 800$$

$$p = \frac{800}{126} \approx 6,34$$

$$\rightarrow Q = 43,66$$

$$q = \frac{43,66}{50} = 0,87$$



$$\pi_i = 6,34 \cdot 0,87 - (6 \cdot 0,87 + 0,2 \cdot (0,87)^2) = 0,144$$

c)

MONOPOLIO  $\rightarrow RM = MC$

$$R = p \cdot q = (50 - q) \cdot q = 50q - q^2 \quad \rightarrow \quad RM = 50 - 2q$$

$$50 - 2q = 6 + 0,4q$$

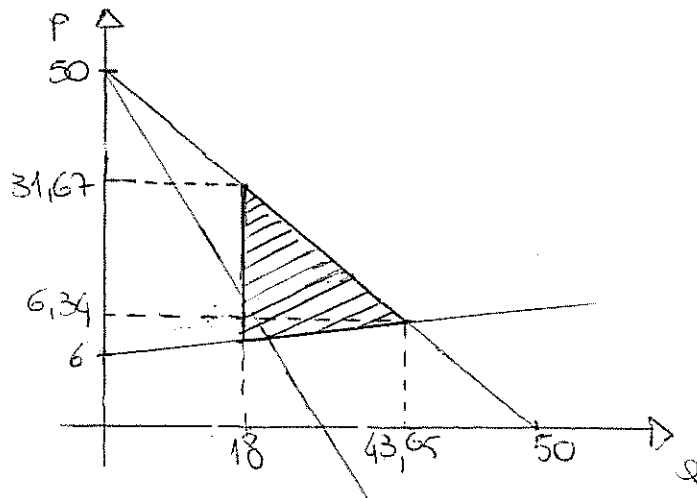
$$2,4q = 44$$

$$q^M = \frac{44}{2,4} = 18,33$$

$$p^M = 50 - q = 31,66$$

$$\pi^M = 31,67 \cdot 18,3 - (6 \cdot 18,3 + 0,2 (18,3)^2) = 402,783$$

d)



PERDITA SECCA

$$(31,67 - 6,34) \left( \frac{43,65 - 18}{2} \right) = 324,86$$