Repaso Parcial 2a

Tuesday, April 7, 2020 2:15 PM

1er Parcial Primavera 2009

1 monopolio, 2 mercado

$q_A = 5 - P_A \Rightarrow q_A = \begin{cases} 5-P_A & P_A \le 5 \\ 0 & P_A \ge 5 \end{cases}$

$q_B = 5 - 2P_B \Rightarrow q_B = \begin{cases} 5-2P_B & P_B \le 5/2 \\ 0 & P_B \ge 5/2 \end{cases}$

$Cmg = 0$

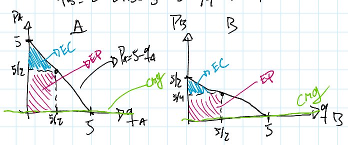
a) $\max_{P_A P_B} \pi = \underbrace{P_A(5-P_A)}_{\pi_A} + \underbrace{P_B(5-2P_B)}_{\pi_B}$

CPO $\frac{\partial \pi}{\partial P_A} = 5 - 2P_A = 0 \Rightarrow P_A^* = 5/2$

$\frac{\partial \pi}{\partial B} = 5 - 4P_B = 0 \Rightarrow P_B^* = 5/4$

$q_A = 5 - P_A = 5 - 5/2 = 5/2$

$q_B = 5 - 2P_B = 5 - 2 \cdot 5/4 = 5 - 5/2 = 5/2$



$ET^3 = EC_A + EC_B + EP_A + EP_B$

(b) $Q = q_A + q_B = \begin{cases} \overset{A}{(5-P)} + \overset{B}{(5-2P)} & P \le 5/2 = 2.5 \\ (5-P) + 0 & 2.5 \le P \le 5 \\ 0 + 0 & P \ge 5 \end{cases}$

$Q = \begin{cases} 10-3P & P \le 5/2 \\ 5-P & 2.5 \le P \le 5 \\ 0 & P \ge 5 \end{cases}$

Supongamos DD $\Rightarrow Q = 10 - 3P$

$\pi = (10-3P)P$

CPO

$10 - 6P = 0$

$P = 10/6 = 5/3$ ✓

Cumple con la condición

$\pi = (10 - 3(5/3))(5/3)$

$(5)(5/3) = \frac{25}{3} = 8.3$

$\Rightarrow P = 5/3$

↳ Maximiza ganancia

$Q^* = 10 - 3P = 10 - 3\left(\frac{5}{3}\right) = 5$

Supongamos DD $\Rightarrow Q = 5 - P$

$\pi = (5-P)P$

CPO

$5 - 2P = 0$

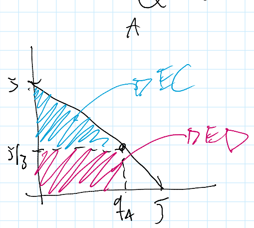
$P = 5/2$ ✓

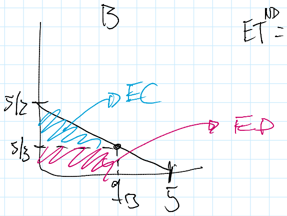
cumple

$\pi = (5 - 5/2)(5/2)$

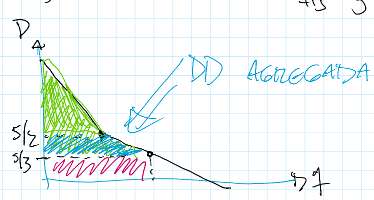
$= (5/2)(5/2) = \frac{15 \cdot 5}{4}$

$= \frac{25}{4} = 6.25$





$ET^{ND} = EC_A + EC_B + EP_A + EP_B$



(c)

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(9) $S_R = \{A, B, C\}$

$S_F = \{r, s, e, u\}$

$B \gg A$

$s \gg r$

a) (A, r) no es O.P. ✗

b) (A, r) no es E.N. ✓

	C	NC
C	5,5	0,10
NC	10,0	2,2

NC >> C para ambos jugadores

a) (A,r) NO ES O.P. ✗

b) (A,r) NO ES E.N. ✓

c) (B,S) ES O.P ✗

d) TODAS

	NC	C
NC		
C		

NC >> C PARA AMBOS SUBTABLEROS

(C,C) O.P.

(NC,NC) NO ES UN O.P.

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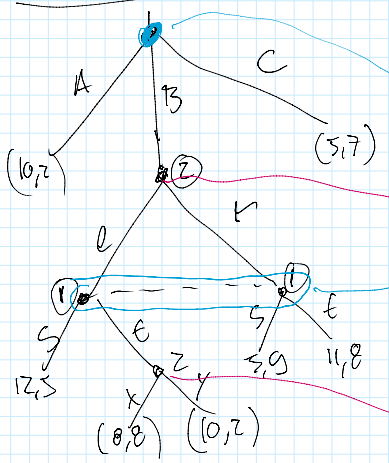
(9) 2019 → NOVIEMBRE



A,B,C → 3 OPCIONES

S,E → 2 OPCIONES

$S_1 = \{(A,S),(A,E),(B,S),(B,E),(C,S),(C,E)\}$

$\ell, r \rightarrow 2$ OP

$x, y \rightarrow 2$ OP

$S_2 = \{(\ell,x),(\ell,y),(r,x),(r,y)\}$

	ℓ_x	ℓ_y	r_x	r_y
AS	10,2	10,2	10,2	10,2
AE	10,2	10,2	10,2	10,2
BS	12,5	12,5	5,9	5,9
BE	8,8	10,2	11,8	11,8
CS	5,7	5,7	5,7	5,7
CE	5,7	5,7	5,7	5,7

$OPEN = \{(BE,rx),(BE,ry)\}$

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(1) ABIERTA

$$\Pi_i = \left(900 - (q_i+q_j)^2\right)q_i - 100q_i$$

$$\Pi_i = 900q_i - (q_i+q_j)^2 q_i - 100q_i$$

CPO

$$\frac{\partial \Pi_i}{\partial q_i} = 900 - 2(q_i+q_j)q_i - (q_i+q_j)^2 - 100 = 0$$

ASUMAMOS (DESPUES DE DERIVADO)

$$q_i = q_j = q^*$$

$$900 - 2(2q^*)q^* - (2q^*)^2 - 100 = 0$$

$$800 - 4q^2 - 4q^2 = 0$$

$$800 = 8q^2$$

$$100 = q^2$$

$$\boxed{10 = q^*} \qquad EN = (q_A = 10, q_B = 10)$$

(b) $\underset{q_A, q_B}{MAX}\ \pi_A \quad s.a. \quad \pi_B \geq \overline{\pi}$

$$\mathcal{L} = \left(900 - (q_A + q_B)^2\right)q_A - 100\,q_A + \lambda\left(900 - (q_A + q_B)^2\right)q_B - 100q_B - \overline{\pi}$$

CPO

$$\frac{\partial \mathcal{L}}{\partial q_A} = 900 - (q_A + q_B)^2 - q_A(2)(q_A + q_B) - 100 - 2(q_A + q_B)q_B\lambda = 0$$

$$\frac{\partial \mathcal{L}}{\partial q_B} = -2(q_A + q_B)q_A + \lambda\left(900 - (q_A + q_B)^2 - q_B(2)(q_A + q_B) - 100\right) = 0$$

$$\frac{900 - (q_A + q_B)^2 - (2)q_A(q_A + q_B) - 100}{-2(q_A + q_B)q_A} = \frac{-2(q_A + q_B)q_B}{900 - (q_A + q_B)^2 - q_B(2)(q_A + q_B) - 1}$$

(c) $q_A = q_B = q^{OP}$

$$\frac{800 - (2q^{OP})^2 - 2q^{OP}(2q^{OP})}{-2(2q^{OP})q^{OP}} = \frac{-2(2q^{OP})q^{OP}}{800 - (2q^{OP})^2 - 2q^{OP}(2q^{OP})}$$

(c)

(c)

$$\Rightarrow \left(800-(2g)^2-2g(2g)\right)^2=\left(-2(2g)g\right)^2$$

$$\Rightarrow 800-4g^2-4g^2=-4g^2$$

$$800=4g^2$$

$$200=g^2$$

$$14.14=g$$

LAB $\quad CMg=2g$

$$IMg^A=CMy^A=2\left(g^A+g^B\right)$$

$$IMg^B=CMg^B=2\left(g^A+g^B\right)$$

Con O

$$CMy^A=CMg^B \Rightarrow IMg^A=IMg^B$$