

Week 12

隨 3 $Q = P = 280 - Q$, $TC_B = 2Q^2$, $TC_B = 9Q^2$

$\text{Max } \pi = TR - TC$

$TR = 280Q - Q^2 = (280 - Q_A - Q_B)(Q_A + Q_B)$

$MR = MC_A$

$$\begin{cases} 280 - 2(Q_A + Q_B) = 4Q_A \\ MR = MC_B \\ 280 - 2(Q_A + Q_B) = 8Q_B \end{cases} \rightarrow \begin{cases} Q_A^* = 40, Q_B^* = 20 \\ P = 220 \end{cases}$$

隨 5 $P = 100 - Q$, $C = 30 + 20Q$

A) P^*, Q^*, π^* # $\text{Max } \pi = TR - TC$

$TR = PQ = 100Q - Q^2$

$$\begin{cases} MR = 100 - 2Q \\ MC = 20 \end{cases} \Rightarrow Q^* = 40, P^* = 60$$

$\pi^* = 2400 - 830 = 1570$

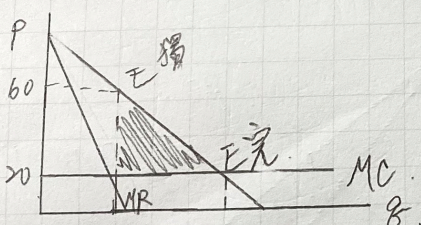
(E) 課 10% 從價格, P^*, Q^*, π^*

$(1 - 10\%) MR = MC \Rightarrow Q^* = \frac{350}{9}$

$MR = (1 + 10\%) MC, P^* = \frac{6500}{9}$

$\pi^* = (\frac{350}{9} \times \frac{650}{9} \times 0.9) - [30 + 20 \times \frac{350}{9}]$

(B) 獨占造成 DWL



$PWL = \frac{1}{2} (40 \times 40) = 800$

(C) Lerner Index 獨占

$L = \frac{P - MC}{P} = \frac{60 - 20}{60} = \frac{2}{3}$

(F) 課 1000 定額稅 $P^*, Q^*, \pi^* = 1720$

定額稅對 MR, MC 無影響

$Q^* = 40, P^* = 60, \pi^* = 1570$

(G) 課 20% 利潤稅, P^*, Q^*, π^*

利潤對 MR, MC 無影響對 π 有影響

$Q^* = 40, P^* = 60, \pi^* = 1570 \times 0.8 = 1256$

(D) 政府課 10 元從量稅, P^*, Q^*, π^*

$MR = MC + 10 \Rightarrow Q^* = 35, P^* = 65$

$\pi^* = 35 \times 65 - (30 + 20 \times 35) - 10 \times 35 = 1195$