

No. :

Date :

Subject :

$$\text{B3 隨3 } D: P = 280 - Q, \quad TC_A = 2Q_A^2, \quad TC_B = 4Q_B^2$$

$$\# \text{ Max } TV = TR - TC$$

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

$$MR = MC_A$$

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

$$\text{B3 隨6 } D: P = 120 - Q, \quad TC = 2Q^2$$

$$(A) P^*, Q^*, \pi^*, \varepsilon_d, L$$

$$TR = P \times Q = 120Q - Q^2$$

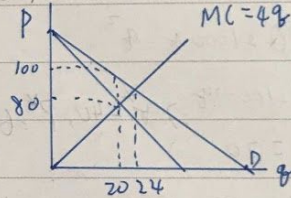
$$\begin{cases} MR = 120 - 2Q \\ MC = 4Q \end{cases} \Rightarrow \begin{cases} Q^* = 20 \# \\ P^* = 100 \# \end{cases}$$

$$\pi^* = 2400 - 400 - 800 = 1200 \#$$

$$L = \frac{P - MC}{P} = \frac{100 - 80}{100} = \frac{1}{5} \#$$

$$\varepsilon_d = \frac{5}{1} = 5 \#$$

(B)



$$DWL = \frac{20 \times 4}{2} = 40$$

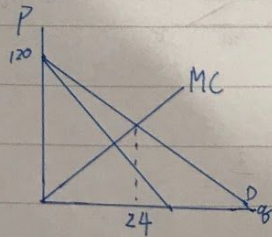
$$(C) \text{ 以 } MC \text{ 訂價, } P^*, Q^*, \pi^*, DWL$$

$$P = MC \text{ [完競]}$$

$$120 - Q = 4Q \Rightarrow Q^* = 24 \#$$

$$P^* = 96 \#$$

$$\pi^* = 96 \times 24 - 2 \times 24^2 = 1152 \#$$



$$DWL = 0$$

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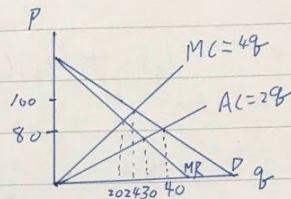
(D) 以 AC 訂價, P^*, q^*, π^*, DWL

$$P = AC$$

$$120 - q = 2q \Rightarrow q^* = 40$$

$$P^* = 80$$

$$\pi^* = 40 \times 80 - 2 \times 40^2 = 0$$



$$DWL = \frac{120 \times 20}{2} - \frac{40 \times 40}{2} = 640$$

需求函數 $P = 100 - q$, 成本 $C = 30 + 20q$

(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% 從價稅 P^*, q^*, π^*

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

$$\text{or } MR = (1 + 10\%)MC \quad P^* = \frac{650}{9}$$

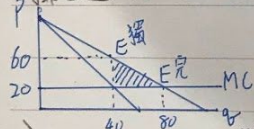
$$\pi^* = \left(\frac{350}{9} \times \frac{650}{9} \times 0.9 \right) - \left[30 + 20 \times \frac{350}{9} \right] = 1720$$

(F) 課 1000 定額稅, P^*, q^*, π^*

定額稅對 MR, MC 無影響

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

(B) 獨占造成 DWL



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

(C) Lerner Index 獨占力

$$L = \frac{P - MC}{P}$$

$$= \frac{60 - 20}{60} = \frac{2}{3}$$

(G) 課 20% 利潤稅, P^*, q^*, π^*

利潤稅對 MR, MC 無影響, 對 π 有

$$q^* = 40, P^* = 60$$

$$\pi^* = 1570 \times 0.8 = 1256$$

(D) 政府課 10 元 從量稅, P^*, q^*, π^*

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

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

(H) 以完全競爭定價, 損失?, DWL?

$$P = MC = 20 \Rightarrow q^* = 80, P^* = 20$$

$$\pi^* = -30 \quad DWL = 0$$

Double A