

隨3  $D: P = 280 - q$ ,  $TC_A = 2q_A^2$ ,  $TC_B = 4q_B^2$

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

$TR = 280q - q^2 = (280 - q_A - q_B)(q_A + q_B)$

$MR = MC_A$ ,

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

隨6  $D: P = 120 - q$ ,  $TC = 2q^2$

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

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

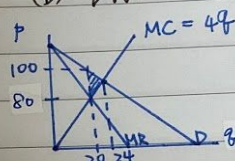
$\begin{cases} MR = 120 - 2q \\ MC = 4q \end{cases} \Rightarrow q^* = 20 \#$   
 $P^* = 100 \#$

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

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

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

(B) DWL



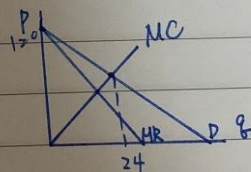
$DWL = \frac{20 \times 4}{2} = 40 \#$

(C) 以 MC 訂價,  $P^*, q^*, \pi^*, DWL$ .

$P = MC$  [完全競爭]

$120 - q = 4q \Rightarrow q^* = 24 \#$   
 $P^* = 96 \#$

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



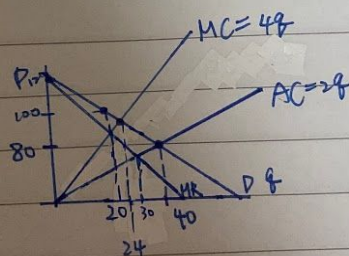
$DWL = 0 \#$

(D) 以 AC 訂價,  $P^*, q^*, \pi^*, DWL$

$P = AC$

$120 - q = 2q \Rightarrow q^* = 40 \#$   
 $P^* = 80 \#$

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



$DWL = \frac{120 \times 24}{2} - \frac{40 \times 40}{2} = 640 \#$

隨5 需求函數  $P = 100 - q$ , 成本  $C = 30 + 20q$

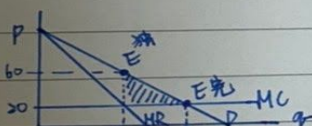
(A)  $P^*, q^*, \pi^*$  #  $\text{Max } \pi = TR - TC$

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

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

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

(B) 獨占造成 DWL



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

(C) Lerner Index 獨占力

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

(D) 政府課 10 元從價稅,  $P^*, q^*, \pi^*$

$MR = MC + 10 \Rightarrow q^* = 35, P^* = 65$   
 $\pi^* = 35 \times 65 - (30 + 20 \times 35) - 10 \times 35 = 1195$

(E) 課 10% 從價稅,  $P^*, q^*, \pi^*$

$(1 - 10\%)MR = MC \Rightarrow q^* = \frac{350}{9}$   
 $or MR = (1 + 10\%)MC \Rightarrow P^* = \frac{650}{9}$

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

(F) 課 1000 元定額稅,  $P^*, q^*, \pi^*$

定額稅對 MR, MC 無影響。

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

(G) 課 20% 利潤稅,  $P^*, q^*, \pi^*$

利潤稅對 MR, MC 無影響, 對  $\pi$  有影響。

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

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

(H) 以完全競爭定價, 損失?  $DWL?$

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

$\pi^* = -30$

$DWL = 0$