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 5 $P = 100 - Q$, $C = 30 + 20Q$

需求函數 成本

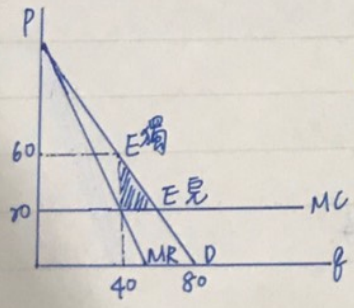
(A) P^*, Q^*, π^* # $\text{Max}\pi = TR - TC$

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

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

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

(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元從量稅，P^*, Q^*, π^*

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

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

(E) 課 10% 從價稅，P^*, Q^*, π^*

$(1 - 10\%)MR = MC \Rightarrow Q^* = \frac{350}{9} \quad P^* = \frac{6500}{9}$

or $MR = (1 + 10\%)MC$

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

(F) 課 1000 定額稅，P^*, Q^*, π^*

定額稅對 MR、MC 無影響

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

(G) 課 20% 利潤稅，P^*, Q^*, π^*

利潤稅對 MR、MC 無影響對 π 有影響

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

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

(H) 以完競定價，損失？DWL？

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

$\pi^* = -30$

$DWL = 0$