隨5 $D: P = 280 - q$, ~~$TC_A = 2q_A^2$~~, $TC_A = 2q_A^2$, $TC_B = 4q_B^2$

求 Max $TU = TR - TC$

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

$MR = MC_A$

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

隨6 $D: P = 120 - q$, $TC = 2q^2$

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

$TR = PxQ = 120q - q^2$

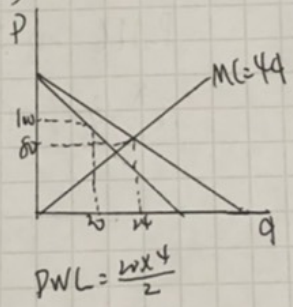
$$\begin{cases} MR = 120 - 2q \\ MC = 4q \end{cases} \Rightarrow \begin{matrix} q^* = 20 \\ P^* = 100 \end{matrix}$$

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

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

$Ed = \frac{5}{1} = 5$

(B)



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

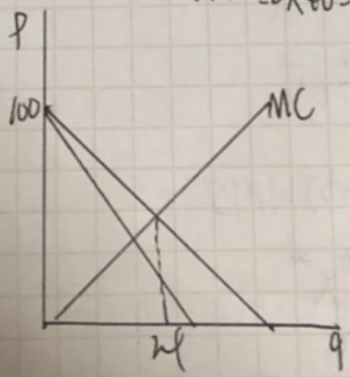
(C) 以MC訂價, $P^* q^* \pi^*, DWL$

$P = MC$ [完全競爭]

$120 - q = 4q \Rightarrow q^* = 24$

$P^* = 96$

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



$DWL = 0$

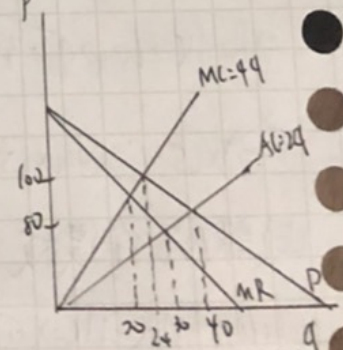
(D) 以AC訂價, P^*, q^*, π^*, DWL

$P = AC$

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

$P^* = 80$

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



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

$= 640$

隨5 $P=100-q$, $C=30+20q$

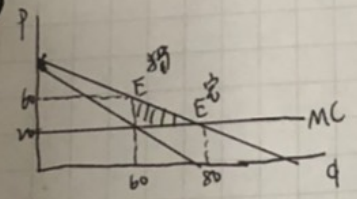
(A) p^*, q^*, π^* . # $Max\pi = TR-TC$

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

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

$\pi^*=2600-830=1570$

(B) 獨占造成 DWL



$DWL=\frac{1}{2}(40\times40)$

$=800$

(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^*

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

$\pi^*=35\times65-(30+20\times35)-10\times35=1195$

(E) 課10%從價稅 p^*, q^*, π^*

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

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

$\pi^*=(\frac{350}{9}\times\frac{650}{9}\times0.9)-[30+20\times\frac{350}{9}]=1760$ #

(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

$q^*=40$, $p^*=60$, $\pi^*=1570\times0.8=1256$

(H) 以完強定價 損失?. . DWL?

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

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