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

$$Max \; \pi = TR - TC$$

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

$MR = MC_A$

$$\begin{cases} 280 - 2(q_A + q_B) = 4q_A \\ MR = MC_B \\ 280 - 2(q_A + q_B) = 8q_B \end{cases}$$

$\Rightarrow \quad q_A^* = 40, \quad q_B^* = 20 \; *$

$$p = 220 \; *$$

隨 5. $P = 100 - q$, $C = 20 + 20q$

(A) p^*, q^*, π^*

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

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

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

(B) 獨佔造成 DWL

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

(C) Lerner Index 独佔力

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

(D) 政府課10元從量稅. p^*, q^*, π^*

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

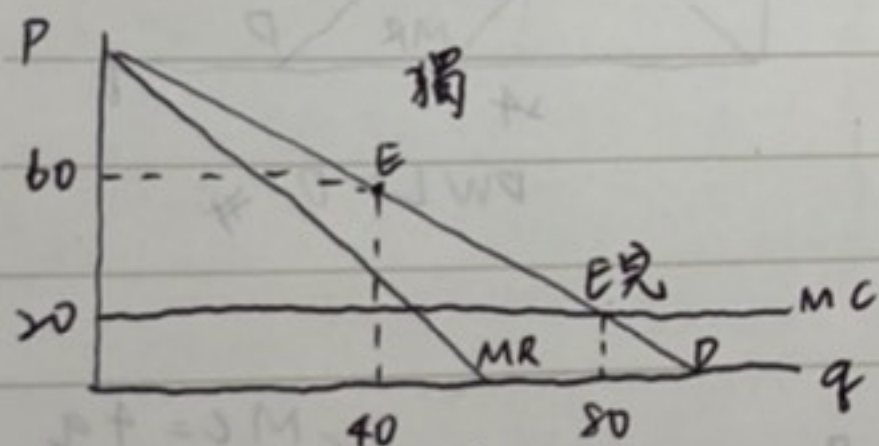$$\pi^* = 35 \times 65 - (20 + 20 \times 35) - 10 \times 35$$
$$= 1195$$

(E) 課 10% 從价稅, p^*, q^*, π^*

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

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

$$\pi^* = \left(\frac{350}{9} \times \frac{6500}{9} \times 0.9\right) - \left[20 + 20 \times \frac{350}{9}\right]$$
$$= 1720$$

(F) 課 1000 定額稅, p^*, q^*, π^*

定額稅对 MR. MC 無影響

$$q^* = 40, \; p^* = 60, \; \pi^* = 1570$$

(G) 課 20% 利潤稅. p^*, q^*, π^*

利潤稅对 MR. MC 無影响

对 π 有 "

$$q^* = 40, \quad p^* = 60$$

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